Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

Vol. XII, No. 4 | FEBRUARY, 1936 | $2.00 a Year

Contents of this Issue

The Furniture Show 5
Paint Circulating System 8
Reclaim Used Wiping Rags 11
Corrected Spray Equipment Saved 50% in Enamel Used 13
Major Review of Developments During 1935, in The Latest Equipment For Modern, Industrial Finishing Departments and Painting Rooms 19
Pressure-Feed Spraying 52
Letters from Readers of "Industrial Finishing" 57
Questions; Answers 61
Editorial 66

Handling Freshly Coated Slats 7
William M. Rand Elected President of Merrimac Chemical Co. 16
Metal Finishing: A New Book 16
W. L. Reineke Is Chicago Manager for Aluminum Industries 16
Speed-Bloc Sander Catalog 54
Compressed Air Units Bulletin by Paasche 54
Detroit Rex Products Co. News .. 60
Enameling Turnings and Wood Toys 64
Resists Refrigerants and Oils 68
The Story of Shellac 69
Metal Cleaning Bulletin 69
Spray-Painting School Opens 69
Airless Abrasive Cleaning 69
Keeler & Long Expand 70
Sprayed Molten Metal Coating Process 70
New Free Book Explains Natural Reproductions in Wood, Marble 71

"Classified Advertising" Section 71
Advertisers' Index 72

Published by

Practical Publications, Inc., 222 East Ohio St., Indianapolis, Indiana

Eastern Office: C. A. Larson, Mgr., 254 West 31st Street, New York City; Phone, Penna. 6-9049

DeVilbiss Equipment Spray-Finishes
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There seems to be almost no end to the unusual applications of DeVilbiss Spray-Finishing Equipment. You will find it helping in the manufacture of everything from buttons to battleships. And right where you might least expect it—in the huge plant of the U. S. Playing Card Company in Cincinnati, special DeVilbiss machines put the "finishing touch" on grand slams in the making . . . Perhaps you have an operation which might be simplified by the installation of standard or specially designed DeVilbiss Equipment. Our engineers will be glad to advise you.

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The Furniture Show

by
Edw. F. Huffman

At the American Furniture Mart in Chicago. Highlights of what appeared in the way of New Finishes and Designs

AT THE 1936 Mid-Winter Furniture Show in the Chicago Furniture Mart you could see almost any type and style of furniture and finish you might be looking for. Expensive period furniture in beautiful figured mahogany, walnut, oak, and in gold and bone white was on display—all of it very appropriate for certain expensively furnished homes and apartments. You could find medium priced and cheap furniture in period and Modern or contemporary styles, some of it being little different, if any, in finish or color from what you had seen at previous shows.

The furniture that attracted attention as being new, different and more in keeping with today's streamlined product design is the Modern style, called by some "Contemporary." While naturally some of this furniture is more or less bizarre with sensational contrasts, extravagant lines and showy colors, more and more of it is subdued in tone to the point where it appeals to the masses of substantial homey people of modest taste and culture.

A few highlights on the lines characteristic of some of the more attractive Modern pieces are: large-radius bow-front dressers and bowed foot-boards for beds; rounded instead of square corners at the fronts of case goods, radio cabinets and cedar chests, and at all four corners of table tops; flush rounded corners around the three edges of dresser and vanity tops, instead of the conventional projecting shaped edges for such tops; bar pulls for dressers and drawers instead of the former turned knobs, drop pulls, metal rings or bails. Some of these pulls consist of shaped blocks of ebonized wood or real ebony; some are metallic finished or real solid metal, and a few are real or imitation onyx.

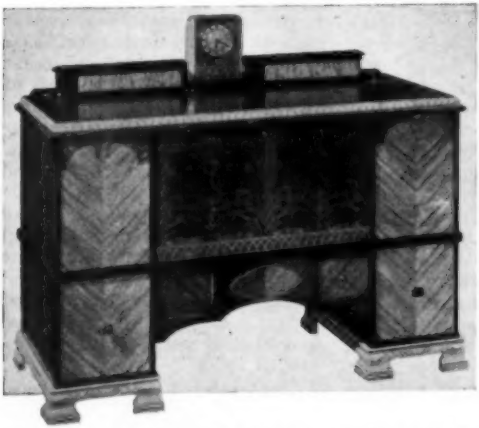
Light-colored natural-finished woods are associated with most of the modern pieces and suites, a favorite arrangement being light colored fronts, doors, panels and perhaps tops in beautifully figured and attractively matched face veneers, with narrow bands of darker wood trimming to produce a contrasting outline. For these light colored areas, some domestic and some foreign woods of natural light color are used. In other cases the light color has been obtained by bleaching most if not all of the color out of medium dark colored woods. The light colors referred to range from almost bone or ivory white to light and medium yellow and to light grayish tints. In a very

few instances the light colored woods have been purposely given a decided tint of salmon or pink, while others have a metallic gray cast. Among the light woods used are figured maple, sycamore, graywood, satinwood, prima vera, avodire, English harewood, tulipwood, kambala, ayous, etc.

A comparison of the case goods exhibited showed the following woods used: Walnut, 40.3%; mahogany 19.9%, maple 9%, oak, 4%, oriental 4%, enameled 2.5%; all other veneer, 15.7%; all other solid 4.6%.

By styles the comparison rated: Modern, 35.7%; 18th Century English 24.3%, unstyled 9.2%, French 8%, American Colonial & Federal 7.5%, Early American 6.9%, Early English 4.3%, Neo-Classic 3.3%, Italian and Spanish .8%.

One popular bedroom space, showed what buyers term, "A fine window suite." The wood used in this 4-piece suite, was avodire, finished natural and rubbed to a semi-gloss satiny sheen. The bases (an apron about 5-in. in height from the floor) were in ebony veneer, finished natural. The unusual material used in this suite, was genuine leather, glued over the entire face of the bed foot-board. Antique brass-headed nails, closely placed around the top of this leather faced foot-board, set off the whole suite in unique fashion. The leather was crackled, and finished in a rich cream color.



Combination cedar chest and vanity or dresser. A product of Ed Roos Co. End panels and lid are walnut. The large front center panel is crotch walnut. Front panels at both sides of the center panel are V-matched avoidire. The single drawer front, below center panel, is 2-way matched walnut.

A maple bedroom suite finished in cherry color was hand rubbed to a semi-gloss luster. It had turned maple pulls also finished in cherry, and natural finished oak drawer interiors.

Some of the novelty furniture was in period or semi-period designs; the remainder in unstyled and Modern. Walnut, finished natural, predominated; next came maple in honey, cherry, and various intermediate transparent colors for the Early American. For the numerous Modern pieces,

various kinds of native and a few foreign woods were used — some finished natural, some bleached to a light color, and some finished in imitation of one or more costly woods.

Many of the upholstered pieces revealed some woodwork—arms, legs, feet, side compartments and some restrained trimming around edges—giving the finisher an opportunity to show expert workmanship which is really demanded on furniture of this type, regardless of the style. Light woods and transparent natural or tinted finishes were the rule, although some bone white and antique ivory also appeared.

Breakfast sets, and kitchen furniture and juvenile furniture continued along the general lines and finishes that appeared in former furniture shows.

Modern "Devon" refectory dinette table with 5-ply top and solid maple base, finished in walnut color. A 9-in. folding leaf is concealed in each end. A design by Lester Wuenn.

Sun room and outdoor furniture is more elaborate and more Modern in style than ever before. Metal frames in chromium and color, some with enameled and natural finished wood arm-rests, were prominent. In addition to round tubular and flat spring cross-sections, some square tubular framework appeared.

Handling Freshly Coated Slats

THE MANUFACTURER of a roller coating machine for enameling two or four sides of Venetian blind slats in one pass through the machine, gives a brief but interesting explanation of how the freshly enameled slats are handled as they leave the machine. He says:

"On the prime coat the general practice is for the girls (operators) to grasp the slat by the edges with the thumb and forefinger, as it comes out of the coating machine. Then they either stand the slat on end, leaning same against a nail-pointed bar, or they place the slat horizontally on racks having nail points in upward position. Some operators put the "Rollacoat" machine on casters and move it down an aisle flanked with racks on either side. On the finishing coat, the slats are handled in the same manner, except that the girls wear leather finger-guards having steel points.

The machine is briefly described and illustrated in the "Review of Equipment" article in this issue.

View of pipe line installation in one of Detroit's large body plants where 1,600 automobile bodies are finished per day. Each pipe carries a different color paint. Regulators keep the paint at an even pressure, regardless of how many spray guns tap off the line. Photograph furnished through courtesy of Binks Mfg. Company.

Paint Circulating System

LEADING automobile manufacturers have installed miles and miles of pipe lines through which color enamels and other finishing materials are pumped from mixing tanks in a central supply room to the spray booths where the material is applied to automobile bodies by spray guns. Why has the automotive industry adopted this system?

Summed up, the advantages for any manufacturer, large or small, are that a paint-circulating system saves money, besides making many improvements possible such as a cleaner, more efficient, more accurate, and more uniform finish.

To back up this statement by specific facts, the finishing superintendent of one of the large automobile manufacturers lists the following savings and improvements as having been made possible after the installation of a complete paint-circulating system. In round figures this superintendent estimates savings of over $10,000 on the basis of 70,000 jobs per year. He lines up the savings under labor, equipment, and material as follows:

Just what are the advantages of a paint-circulating system over older methods of supplying each spray gun from individual containers or pressure tanks?

This question is answered by engineers of the Binks Mfg. Co., with the help of an expert on finishing in a large automobile factory in Detroit, Michigan.

▼ ▼ ▼ ▼ ▼

Savings Effected by a Paint Circulating System

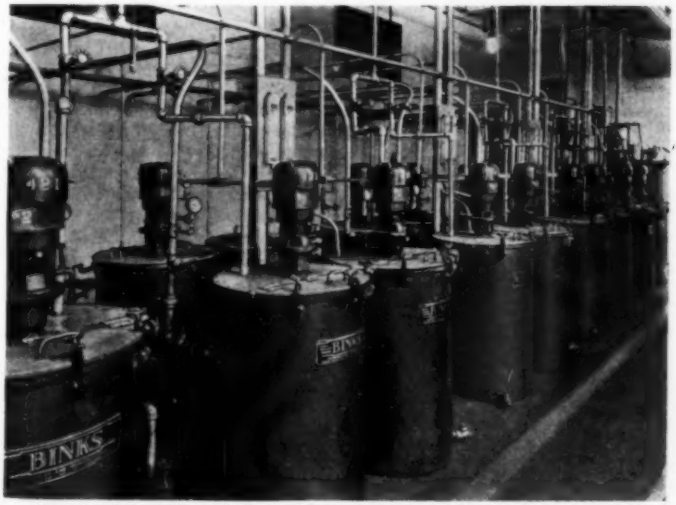
LABOR SAVINGS include the wages of two paint changers and one trucker. (Where special paint changers are not provided, the operator must perform the work himself and shut down the line in the meantime. Such shutdowns, if overhead and production are considered, involve more than labor cost alone.)

EQUIPMENT SAVINGS for these 70,000 jobs include the elimination of 115 trucks necessary to carry fenders, hoods, splash aprons, etc., from finished work "bank" to assembly line. With a circulating system, these parts can be sprayed in any color without delay, and the day's production can be established.

Sheet iron parts can be delivered at the point of car assembling by means of a conveyor system, so that bodies and sheet iron arrive at this point finished in their proper colors, eliminating the "bank."

MATERIAL SAVINGS are made with the circulating systems by avoiding paint losses at the booths. This loss occurs on color changes. Tests of savings were based on spraying 300 sets of sheet metal (100-sq.ft. per car set). The savings on the cleaning of the individual paint container on actual test amounts to about three gallons of paint on 1,690 jobs, not counting the savings on the cost of the thinner used for cleaning.

Naturally savings will be in proportion to volume usage, but under ordinary circumstances,



View of paint mixing and circulating tanks from which paint is circulated to the spray booths. Vertical electric motors operate agitator paddles and keep the paint in constant agitation. The tanks are filled from large paint drums carried to the top opening on overhead conveyors. Photograph, courtesy of Binks Manufacturing Co.

such a system will pay for itself within a few months, and thereafter it will return the customer his investment many times over.

However, even if there were no actual money savings, the advantages and improvements made

Absolute uniformity and viscosity of paint are assured by "weight" mixing. The clear vision gauges show exact weight of lacquer and thinner added to the tanks. Any color can be matched perfectly. Photograph, courtesy of Binks Mfg. Co.

possible by installing a paint-circulating system would entirely justify the expense involved, as will be seen by a close study of the following list:

Improvements Made Possible by Paint Circulating System

1) Creates better working conditions.

2) Reduces the occupancy of floor space to a minimum.

3) Conforms to insurance company requirements.

4) Paint is conveyed to spray booths in a totally-closed pipe line system, and the greater percentage is retained in storage tanks in a fireproof mixing room. Only 2.3 gallons per 100-ft. of ¾-in. pipe are actually in circulation.

5) Eliminates the trucking and handling of paint through various spray booths where a change in color is required.

6) Paint is at all spray booths at all times, in case a change is made in color to meet line requirements.

7) Eliminates the necessity for maintaining mixed paints for various color combinations and extra containers.

8) Discontinues the continual refilling of small containers in each spray booth.

9) Reduces possibilities of off-color paint to a minimum by mixing the material in greater quantities instead of small batch lots. The greater the quantity mixed the less possibility for off-color, and naturally, with a pipe line system, you do not have small batches to mix.

10) Insures proper mixing and continuous agitation of paint at all times. By the use of hydrostatic gauges on tank system, paint viscosity can be accurately controlled and paint can be mixed on a weight basis instead of by volume.

11) Improves spraying because of cleaner paint and because the viscosity of paint, once established, can be controlled in the mixing room.

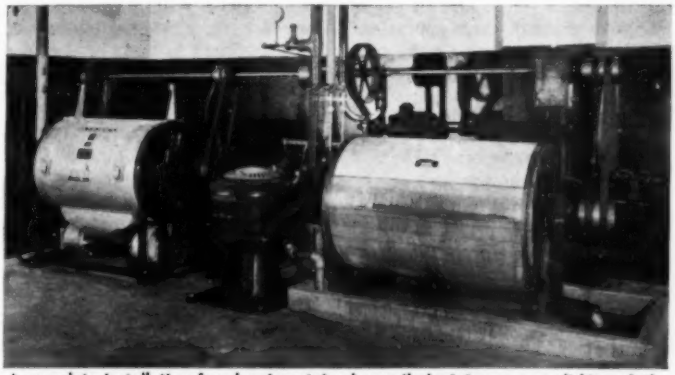
12) Saves cost of paint and labor for cleaning used containers.

13) Reduces evaporation loss of thinner in mixing paint.

14) Material pressure regulators insure accurate uniform pressure at spray guns at all times.

15) Because the gun pressure can be accurately controlled, the film thickness of the finish coat

(Continued on page 65)



A complete installation for cleaning stained or soiled wiping rags, polishing cloths, waste, etc. Photo, courtesy Rochester Engineering & Centrifugal Corporation.

Reclaim Used Wiping Rags

Wiping rags and cotton waste, such as used in the finishing room, can be cleaned repeatedly by economical equipment designed especially for this purpose.

A SATISFACTORY and economical means of cleaning and drying soiled wiping and polishing cloths, so they can be used over and over again, is available and is being employed by a number of industrial concerns in their departments devoted to wood finishing, metal cleaning, metal finishing and metal polishing. A complete set of equipment for cleaning and drying soiled rags, cotton waste and material of similar nature, includes a power washing machine, an extractor for removing surplus water, and a drying machine, as illustrated above.

The material to be reclaimed is first placed in the washer where the dirt, grease or stains are removed. The formula for the washing solution will depend upon the type and degree of soil in the cloth. Supplies are inexpensive.

After the material is cleaned, the extractor removes surplus water. Lastly, the drying tumbler completely dries the material and gives the cloth a soft absorbent finish which, in most cases, makes it better for wiping than the new cloth.

Equipment; Cost; Operation

Units can be furnished to handle 20-lbs. or 4,000-lbs. per operation. Hundreds of manufacturing plants have their own reclaiming installations, some of them report-

ing thousands of dollars in profit per year through their operation. Not only do they save on the cost of wiping rags, but on their investment in them. Their stock in wiping rags can be kept down to a minimum because the soiled material can be made ready for use again in a few hours.

The cost of suitable reclamation equipment can be kept within the appropriation available for the purpose. One manufacturer offers seven different styles of washing-machines from which a suitable size for any requirement can be selected. Centrifugals and drying machines are also made in a wide variety of sizes.

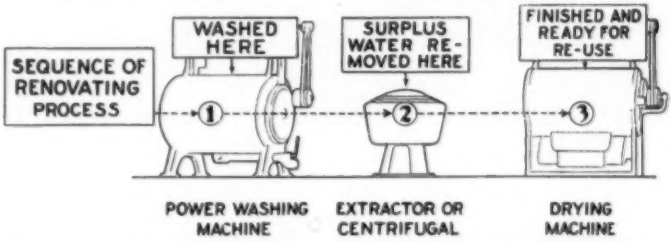
Machines are furnished with motor drive or belt drive. If steam is available, and there is no hot water, the water can be heated right in the power washing-machine. The consumption of water, steam, and electric current is exceedingly low.

This reclamation equipment can be located in a corner of the basement, in the power room, or in any space that may be available. It doesn't require a great deal of floor area.

Operation of the cleaning equipment can be entrusted to the night watchman, a laborer who cleans up around the plant, a boy from the stock room or tool room, the fireman, or any other laborer who does not have a complete day's work assigned to him.

Saving and Profit

Suppose the market price of wiping rags is 10c a pound. The average cost of reclaiming (this figure is taken from reports furnished by over 1,000 users of "Rochester" reclaiming equipment) is 3c a pound. The saving is 7c per pound. With a fair quality of rags or waste, a user can repeat the reclamation process 10, 15, and in some cases, 20 times. Specially made wipers or knitted wipers can be reclaimed even more often, and at the same cost as cheaper wiping rags.



Other Advantages

One of the biggest advantages in using this cleaning equipment is the fact that soiled wiping rags or waste can be reclaimed in a few hours' time, enabling the manufacturer to keep down the stock that must be carried on hand. This saving is a very important one.

Clean wiping rags and waste will not ignite; and one of these reclaiming outfits enables the user to wash rags and waste as soon as used. This reduction of the fire hazard is a long step toward greater safety in the factory.

CORRECTED

Spray Equipment Saved 50% in Enamel Used

by T. R. Nall
Practical and Seasoned
Expert in Spray Finishing

RECENTLY I was called to the factory of a large company that manufactures trailers, to straighten out their painting problem. They claimed it took five gallons of synthetic enamel to spray one of their trailers, and they blamed the material, which was being supplied by the company I now represent.

Here is an important point I want to bring out to every user of paints, enamels and varnishes in the industrial field. Mind you, this trailer company is one of the most uptodate firms of its kind in the country; but they were neglecting a most essential feature in the production of their finished product. Everything was perfect but their spray equipment. This is what I found:

Spray Equipment Badly Out of Order

The air compressor would start pumping air, and would run the pressure up to 70-lbs. Fine. Then, after the finisher had been spraying for about five minutes, the air pressure would go down to 45-lbs. Not so good. Here's the result: While the finisher was spraying with high air pressure, the material broke up nicely, giving a perfectly smooth finish; but when the air pressure went down to 45-lbs., the finished surface showed an orange peel effect, which they thought was due to some fault in our material.

The spray gun they were using leaked air all around the chambers, and its adjustments were past adjusting. Part of the time, when the air pressure was high the operator sprayed a stream 10-in. wide; but when the air pressure went down, the gun sprayed a stream only 5-in. wide.

I found water and oil in their air tank, and also in the pipe lines which supplied air to the spray booths. They had a filter or oil-and-water separator at the spray booth and one at the air drum; but they did not drain the air tank two or three times a day as they should. Oil and water accumulated in the tank so rapidly that the filters or separators could not take care of them. The accumulation of oil was caused by a worn piston and cylinder in the compressor. Excess water was caused by the condensation of moisture from the compressed air.

Changes Recommended and Made

Here is what I recommended to straighten out the trouble: Overhaul the compressor and place it in condition to maintain an even air pressure up to 75-lbs. Also, buy a new spray gun. I recommended draining the air tank two or three times daily. This removes excess water before it reaches the spray booths; then the filter takes care of the condensation in the air line.

The filters were cleaned thoroughly and new packing was put into them. I recommend repacking the filters each week. I use cheesecloth to repack; when removing this packing, you will notice that it catches a lot of dirt and that it is well saturated with moisture.

Half the Material Half the Labor

The following day I returned and sprayed one of their large trailer bodies, with the spray equipment all in good working order. I sprayed on two coats of synthetic enamel, and used only 2½-gallons of material, thereby saving them 2½-gallons . . . and I sprayed the trailer in half the time it had taken their operator to spray it before the spray equipment was put in proper condition. Executives of this trailer company were well pleased after I had demonstrated to them the remarkable saving in time and material; and they were convinced that it was not our company's material that had been causing the unsatisfactory results.

Often, users of finishing materials are too hasty in deciding to lay the blame for their troubles at the door of the manufacturer of finishing materials. Of course, we all make mistakes. I have been guilty of this mistake myself. Having been a finishing foreman for several years, and now working for a company that manufactures finishing materials, I can see how easy it is for one to be too hasty about shifting the blame for his troubles onto innocent shoulders.

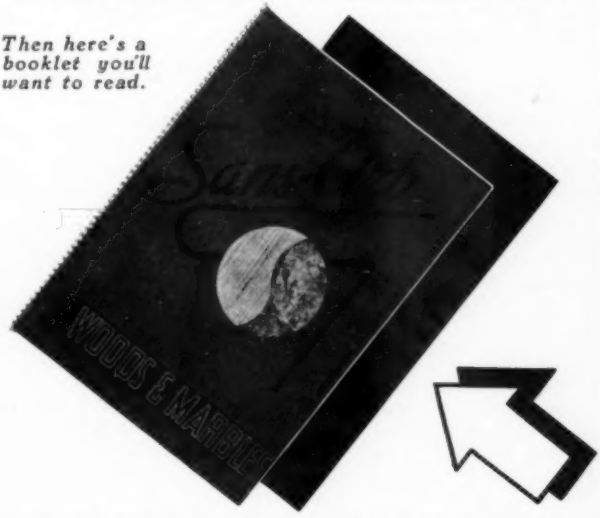
Inspect Equipment Daily Have Spare Parts or Guns Ready

If users of finishing materials could realize how important it is to have all spray equipment in perfect working condition, and how much money can be saved by keeping new parts for the spray gun, such as fluid tips, fluid needles and all other working parts of the gun in stock, and watching the equipment every day to see that each gun is working perfectly, it would benefit them to the extent of making possible savings of several thousand dollars a year. A faulting working spray gun can cost a company $25 per day, or more, above what a new gun will cost.

In a large production plant where several spray guns are in operation, I would recommend that the company delegate one man to check on all spray equipment each morning by testing every spray gun used and then making a daily report to the office. He should check the air pressure several times a day on his reports. Where several spray guns are in operation in one plant, I know a considerable amount of money can be saved. Also, this attention to the spray guns will result in producing more uniformity in the sprayed work which, in turn, will give the company better finished products . . . and better sales for same.

Interested in GRAINING MARBLEIZING OR ANY TYPE OF DECORATIVE FINISH?

Then here's a booklet you'll want to read.



If you are interested in beautifying your product with a decorative finish, you'll be keenly interested in this story of SANS-ARB . . . a new and superior method for reproducing wood-veneers and marbles. In addition to woods and marbles, this process recreates with amazing exactness such decorative patterns as onyx, cloisonne, reptile skins, engine turning, leather, plaids, etcetera. Send for the booklet and tell us your interests. Write for your copy today.

THE MEYERCORD CO., 208 W. WASHINGTON ST., CHICAGO

In most cases these things I have just mentioned are left to the spray operators. If a man is working piece work he will go ahead and use the spray gun all day rather than report that the equipment is not working properly. He knows it will take time to repair the gun and, as a result of this delay, several dollars are wasted before he makes his report. I strongly recommend having several extra spray guns, so that just as soon as the checking man or spray man finds one of the guns out of order, he can replace it with an extra gun in perfect working condition.

This I have recommended for a large plant. Of course, in a small plant working on small production, the finishing foreman could check and take care of these repairs and replacements of spray equipment.

Check Amount of Material Used

I suggest checking every spray man's amount of material at the beginning of each day's work, and then check the amount of material used at the end of the day. Then count the work each man has turned out—sprayed and uniform. In this way the management will know how much material each man has used. If one spray man has used more material than the other men, and didn't turn out any more work, either that spray man is inefficient or his spray equipment is out of order.

If every user of industrial finishes would give the manufacturer from whom he buys materials an opportunity to straighten out these troubles before condemning the material, it would save the expense of having different companies experimenting in their plants. Most manufacturers of finishing materials have one or more service men to check these troubles—and they will do it for the asking.

William M. Rand Elected President of Merrimac Chemical Co.

Mr. William M. Rand has been elected president of Monsanto Chemical Co's. subsidiary, Merrimac Chemical Co. of Everett, Mass. He succeeds Mr. Charles Belknap, who recently moved to St. Louis, headquarters of the Monsanto Chemical Co., as executive vice president. Mr. Rand joined Merrimac in 1919 and has been vice president in charge of sales since 1923. Mr. Rand is also a director of Monsanto Chemical Co.

Metal Finishing; A New Book

An interesting and informative book covering practically all phases of modern metal finishing, including metal cleaning and plating, is announced by the McGraw-Hill Book Co., Inc., 330 W. 42nd st., New York, N. Y. The book contains 333 pages 6x9-in. and is substantially bound in a stiff cloth-covered binding of dark blue color, letter in gold. The contents are divided into six parts with 29 chapters—all extensively illustrated with line drawings and halftone cuts. The book sells for $3.50 and should be in the library of every man who has anything to do with metal finishing, or the design and production of metal products.

W. L. Reineke Is Chicago Manager for Aluminum Industries

Announcement of the appointment of W. L. Reineke, as Chicago district manager, is made by A. E. Heroux, manager of the Aluminum Paint Division of Aluminum Industries, Inc., Cincinnati, Ohio, manufacturer of Permite products.

Reineke's territory, with headquarters at 616 S. Michigan Ave., Chicago, will include North and South Dakota, Minnesota, Wisconsin, Iowa, Illinois, Michigan, Indiana and all of Ohio, exclusive of Cincinnati. He assumed his new duties January 9th. Reineke, 39 and a long time resident of Chicago, joined the Permite organization after several years as sales representative, contacting national distributors.

Major Review of Developments During 1935, in

The Latest Equipment

For Modern, Industrial Finishing Departments and Painting Rooms

THE TREND in equipment for the finishing room is strictly toward machines, devices and apparatus that save labor, material, time and trouble, and which help to make finishing departments more safe from fires, explosions and accidents. Highlights of what is new and improved include:

1) Automatic conveyor-type machines for spreading finishing materials on surfaces evenly; improved spraying, roller-coating, dipping and tumbling machines.

2) Conveyor-type ovens which produce rapid uniform drying.

3) Apparatus for recovering the pigments of over-spray, used solvents and used wiping rags.

4) Equipment for continuously circulating finishing materials through pipe lines just as compressed air, water, gas and oil are circulated. (Spray material hose are connected to these pipe lines at various stations.)

5) Machines for agitating or stirring up and thoroughly mixing materials in containers.

6) Non-sparking explosion-proof motors.

7) Machines for forcing thin liquids such as waterproofing, fireproofing and sealer compounds deeply into porous surfaces like wood, fiber, paper and fabric.

8) Devices for revolving turntables in spray booths.

9) Tools for making single and multiple stripes in one or more different colors.

10) Flow guns for laying down stripes of heavy materials.

11) Buffing and polishing machines.

12) Filters for removing oil, dirt and excess moisture from compressed air lines.

13) Improved respirators for workmen exposed to fumes, over-spray or dust.

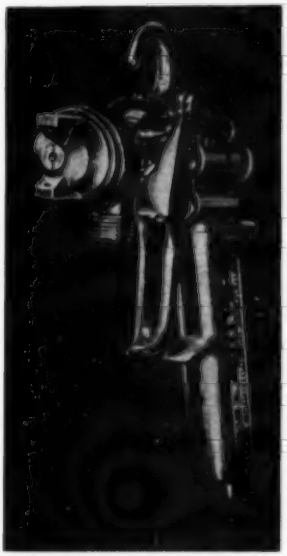
14) Machines for cleaning and conditioning surfaces to be finished.

While some of these machines and devices are strictly new, the majority are the result of added improvements or refinements on equipment that has been previously available, but which recently has been developed still further along certain lines in order to make it adaptable either to a greater variety of work, or to certain specific jobs which call for intensive specialization. Every item in this Review merits careful consideration because it represents some specialized manufacturer's answer to certain needs or demands of users of equipment for something better. Write or wire INDUSTRIAL FINISHING about any one or more of these products that interest you.

Gast Core-Mold Sprayer—Reported by foundries using it to paint cores—both green and baked—in one-tenth the time formerly required. May also be employed in spraying heavy paint or enamels and vitreous enamels in the finishing industry. In addition to saving 90% of the time, the spray gets in and covers surfaces inaccessible to a brush, reaching the deep pockets of molds and giving them the same protective covering as the fully exposed surfaces. During application, the paint or enamel is being constantly agitated, which provides a uniform mixture unvarying in consistency. A 10-gallon tank permits continuous use of the spray, with frequent filling unnecessary.

Paper Paint Cup—One quart capacity. Designed to provide a maximum of economy and convenience in paint shops and finishing rooms where there are frequent changes in color or material. As the cup is used, it can be quickly and inexpensively replaced by another. Cup is a substantially constructed paper cylinder with flanged upper edge and a light metal bottom.

Thor Model 2 Spray Gun—As shown in the illustration, there are four auxiliary holes on either side of the center jet, from which both air and material flow. The four auxiliary air jets (formerly there were only two) travel parallel to the center jet, reinforce it, and enable it to maintain high resistance to the side jets. This permits the greatest possible velocity through the center port without having to increase its diameter, which would materially impair atomization. With this new added strength on the central stream, the velocity of the side jets can be increased, which results in improved atomization without destroying the uniformity of the spray pattern.



Improved nozzle has more air jets.

UBCH Production Airbrush—

1) High production speed without sacrifice of fineness of finish or atomization.

2) Economy of operation and adaptability to new materials and conditions.

3) Easily handled because of its perfection of balance and the instant response of its trigger.

4) Long continuous service . . . . made to stay in order and on the job.

5) Almost 100% immune from accidental breakage because all vital working parts are incased.

6) Complete convertibility . . . . user has choice of wide variety of spray nozzles; gravity, syphon, or

pressure feed can be used; air hose can be attached to back of barrel or bottom of handle; fits itself to the individual requirements of user.

7) Adjustable fluid lock permits operator to easily and quickly adjust flow of material to any degree of coverage desired, from the lightest coat to the heaviest.

8) Designed to meet practical requirements . . . . after the manufacturer made nation-wide survey to find out what features are most desired.

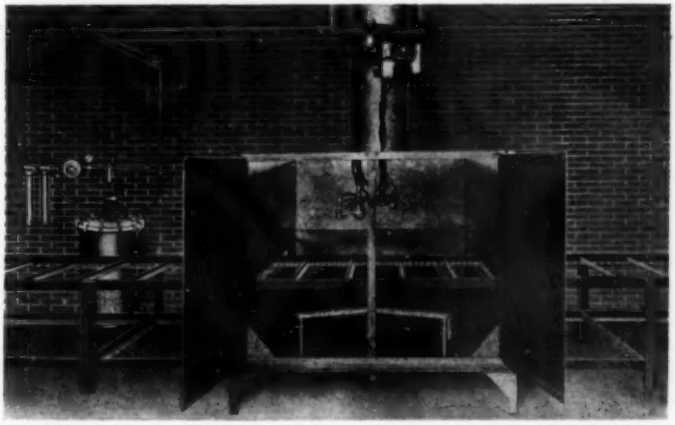
Two New Air Caps—For Type MBC spray gun. Both caps have been thoroughly tested under practical operating conditions in the fields and uses for which they are intended.

No. 54 Cap is the new, narrow-horn, twin-jet type, designed to produce a wider, more even spray without split. It will find its most extensive use with portable outfits, although it is suitable for smaller industrial installations.

No. 76 Cap is designed for use with lacquers, primers, and heavy-bodied synthetics in volume production industrial finishing. It is provided with three auxiliary atomizing jets which give a wide, well atomized, straight-sided pattern. Because of the wide spray and speed of the cap, it should not be held more than 8-in. from the surface to be painted.

Spray gun caps No. 54 and No. 76.

Swinging-Arm Spray Coating Machine—Designed for production spray coating of flat products up to 4-ft. in width, such as sheet metal, glass, tile, fabrics, floor coverings, wallboard, paper and imitation leather. Applies a smooth, even finish at a speed of 10 to 40-ft. per minute, depending upon the type of surface, kind of finish desired, kind of finishing material used, and speed of conveyor. Supported in a suitable frame, the machine is mounted to the ceiling above the conveyor which carries the work to be sprayed. The mechanism used to drive the two



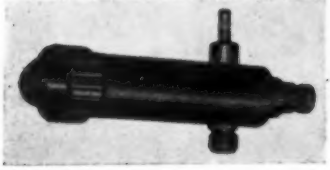
Adaptation of spray-painting equipment to continuous production, coating flat sheets.

swinging arms which carry spray guns, is so designed that a slowly increasing and decreasing reciprocating motion is provided to compensate for the arc which would be produced by swinging the arms from a fixed position. The result is a uniform sprayed coating from one side of the work to the other.

Spray guns are automatically opened and closed at the beginning and end of each stroke, just as in proper hand operation. The spraying time of the guns during the stroke can be varied to suit the width of the product to be sprayed.

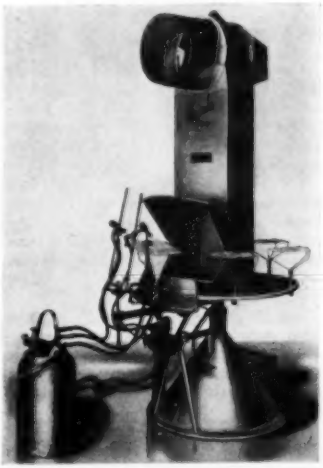
This spray booth is composed of four sides and a bottom. The conveyor and the work it carries enter and leave the booth through openings in opposite sides. Two large doors at the front permit easy access for cleaning. Bottom of booth is flat. The exhaust duct, at bottom of booth and at right angles to the conveyor, has a removable top and adjustable side openings so set as to create an even distribution of exhaust. Fan connection is made at the back of the booth from which the exhaust pipe may be run in a vertical or horizontal direction.

Non-Metal Spray Gun—Developed especially for spraying acids, acid solutions and various corrosive liquids; also hot glassware. Made from a Bakelite base, it can be manufactured for much less than from acid-resisting metal. The Bakelite spray gun has fluid adjustment and is semi-automatic in operation. Glass material containers are usually used with it. The gun can be used singly or combined with others to form a battery of automatic spray guns.



Made from a Bakelite base.

Automatic Aircoating Machine—Has revolving turntable and is designed to coat top, bottom and all edges of a metal tray used as a refrigerator accessory. Is equipped with six spindles to which are mounted 3-prong removable carrying fixtures which rotate and support these trays as they pass through the coating station. The coating station consists of three automatic spray guns, mounted on a radial oscillating-action adjustable gun mounting, with hose, regulators, gauges and spray booth.



Automatically enameling kitchen utensils.

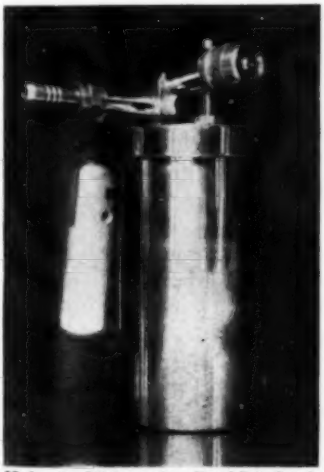
The flow of material from the airbrushes is under constant control. Material is sealed automatically and cannot harden or set in the spray guns, regardless of whether they are shut off for only an instant or for several hours.

An ingenious automatic device, synchronized with the revolving table, turns the guns off and on instantaneously as each piece comes within range and again passes out of range. An oscillating device keeps all guns centered on the object be-

ing coated to prevent over-spray and waste of material.

The machine is complete with fireproof exhaust and ventilating unit ready to attach to the air and power supply. It is also equipped with a variable-speed electric motor or air-motor drive, with automatic oiler and silencer, to operate at speeds of 1, 2, or 3-r.p.m.

"Duquesne" Flat Spray Machine—A small sprayer, with cup attached and without a needle, having a flat spray. A specially designed nozzle flattens out the spray, enabling it to cover large areas evenly and in much less time than with the ordinary "round spray." It is designed to handle heavy liquids such as lacquers, enamels, glazes, bronzes and like materials . . . . for covering large surfaces quickly. A regulator on top of supply tube accurately controls the volume of fluid desired for spraying. The adjustment is simple . . . . By removing the regulator, the reservoir can be easily cleaned of any material which may have become hard.



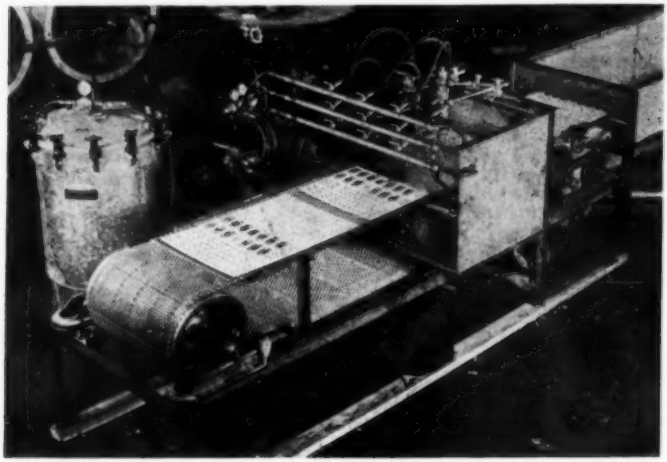
Made of solid brass, heavily nickel plated.

It's turned by a compressed air motor.

Automatic Turntables—For use in spray booths; can be revolved in front of spray operator by simply pressing a foot pedal controlling the motor. Is operated with either air or electric motor.

Airflo Portable Spray-Painting Outfit—Powered with a new type compressor that never requires oiling; provides clean air always. According to the manufacturer the diaphragm design produces greater air output per motor horsepower and permits an assembly that is unusually compact and extremely portable. A new group of guns and accessories has been developed to secure the maximum benefits in painting performance from the new compressors which are made in ¼, 1/3 and ½ hp. sizes. This results in there being eight complete painting outfits to choose from in this new line.

Machine Sprays and Dries Sheet Stock—A new development in automatic spraying and drying equipment . . . . easily adaptable to a variety of uses. In the particular case illustrated, a conveyor type of automatic spraying and drying machine is shown in service for coating large flat sheets of uncut playing cards. The cards are fed to the machine on an endless, wire-mesh con-



This machine automatically sprays and dries a coat of clear finish on printed sheets.

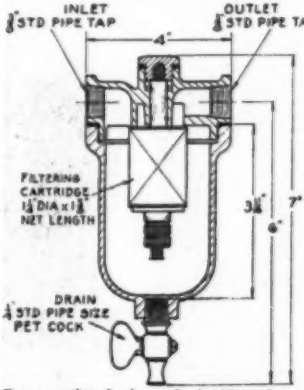
veyor belt and, as they travel past three automatic spray guns, they are sprayed with a glossy coat of transparent finishing material.

An exhaust hood (removed for shooting this picture) fits down over the spray gun chamber, and a strong suction of air pulls away the spray mist. The mesh conveyor has an adjustable speed control of 16 to 48-ft. per minute.

Leaving the spray conveyor, the coated cards are discharged onto an endless, canvas, drying-chamber belt. The insulated drying chamber is filled with hot air. . . . On reaching the unloading end the cards are dry and ready for cutting. The same style automatic spray machine can be adapted to suit the needs of manufacturers having similar production problems.

Air-Filter Trap—A small, compact and efficient device to insert into compressed-air pipe lines at stations where air is used for spraying. Removes oil, dirt, and moisture. Made of die-cast metal, hence very light. Easy to clean.

The filtering cartridge consists of round, thin, grooved and perforated discs, the size of the grooves determining the fineness of filtration. Air enters the cartridge from the outside and is driven through the finely spaced slots between the discs and passes through the inner chamber, and on into the outlet pipe.



Cross-sectional view of air filter for use in compressed-air pipe lines.

THE WORD GOES 'ROUND and 'ROUND

about the new line of Stanley Metallic Lacquers

Produced in a wide range of standard colors and shades, these lacquers will provide beautiful, smooth and lustrous finishes. The twenty-six standard shades, with the exception of five, contain no dye or bleeding colors which insures maximum resistance to fading and permits top coating with clear lacquer when desirable.

Our formulation practically eliminates the settling of the metal powders and with normal stirring before use each lacquer will produce a uniform color and metallic effect.

Stanley Metallic Lacquers can be reduced considerably for spray application and will prove easy to spray. The film will have excellent adhesion, hardness and general durability.

A trial will convince you that these new lacquers meet a real need in this interesting type of finish.

THE STANLEY CHEMICAL COMPANY

EAST BERLIN, CONN.

LACQUERS - SYNTHETICS - ENAMELS - JAPANS

A Subsidiary of THE STANLEY WORKS, New Britain, Conn.

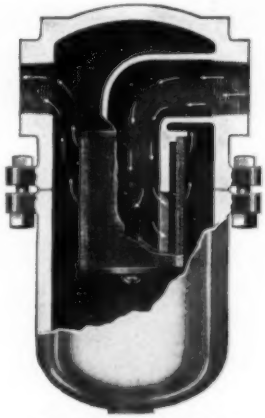
Compressed Air Filter—This purifier has a glass shell through which any accumulated oil, moisture or dirt can be readily seen, enabling the user to quickly determine when cleaning is necessary. A series of

Filtered dirt can be readily seen through the cylindrical glass case.

perforated plates and strainers remove foreign substances from air lines, insuring at all times a clean, moisture-free flow for paint spraying. The purifier has few parts and can be quickly and easily taken apart for cleaning.

Water & Oil Filter—Will remove water and oil from either steam or air. This new unit utilizes the patented principle of zig-zagging the moisture and oil-laden vapor through several layers of coarse mesh screen, which produces the same effect as thousands of tiny baffles.

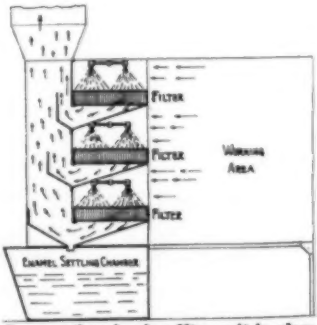
It is claimed that the large effective area of the screen, plus the space between the parts and the screen, permits the separator to



Sectional view of separator.

function as a strainer for long periods without cleaning . . . designed for pressures up to 150 lbs.; may be permanently installed in the line; interior parts can be removed without disturbing inlet and outlet connections; built in sizes ⅜ to 2-in.

Filter Unit for Spray Booths—Can be installed in existing spray booths, as shown in illustration. Especially adapted for vitreous enamel spraying, as it offers a means of reclaiming a large percentage of frit. Offers



Cross section showing filter unit in place.

ORIENTAL LAC

Gives 16% More for Your Money

Pure shellac has always been a good sealer. It dries dependably, sands freely and is very durable.

Oriental Lac closely approaches the quality of pure shellac—so closely that many find that it serves their purpose as well.

Oriental Lac looks like pure shellac. It reduces with alcohol, sprays smoothly, dries quickly and sands crisply. It has excellent resistance against blushing, and works well under lacquer or varnish.

Oriental Lac gives you 16 per cent more for your money. This is a saving you will want to investigate. Order a trial five gallons today to be shipped prepaid at the barrel price.

JAMES B. DAY & CO.

Manufacturers of Shellac, Lacquer, Enamel, Stain, Filler

CHICAGO

very low resistance to air velocities. Fits snugly into back of present booth, requiring very little space. Uses small quantity of water. Each unit individually engineered and designed.

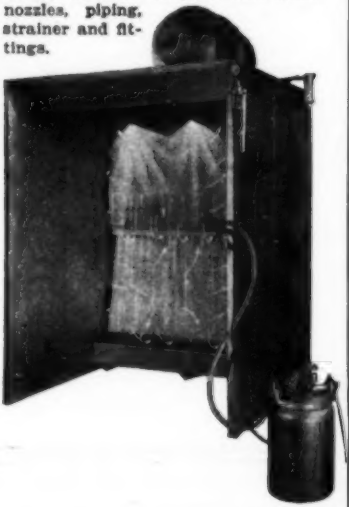
Paint Spray Filter—Filters for installation in the backs of spray booths, to catch the residue from paint, lacquer or varnish. These filters can be installed in any spray booth. They prevent paint or lacquer residue from reaching the exhausting chambers, stacks and exhaust fans. Residue, thus stopped runs down the filter plates and collects in removable drip pans or drawers.

Diagram showing position of six filters (each with a drip pan) in a frame, which is provided with each installation. The frame is centered in the partition which separates the spray booth (shown in dotted lines) from the exhaust chamber.

Because of their self-cleaning feature, Type A filters can be used over a long period of time before cleaning. They can be easily removed and washed in a stripping tank, after which they are again ready for use. The Type B filter is designed to effect a complete stoppage of the powdery residue from lacquer or similar quick-drying paints; collected residue remains in the filter. The units are easily removed and cleaned by washing in a stripping tank.

Self-Cleaning Airfinishing Booth—Water spray, supplied from the city water supply, automatically cleans and keeps clean the air-distributing plates and rear of the booth . . . washes the material and fumes from the air-distributing plates onto a removable collector screen. The water vapor is removed by the ventilating unit, thereby preventing any possibility of the finish blushing. The water drained from the collector pan into the sewer carries no materials that might cause an explosion.

The exhaust housing, the fan, and the piping to the outside are protected and kept clean automatically, eliminating frequent replacement and fire hazards. No time or money need be spent cleaning the fan or in removing any accumulation of material in exhaust pipe to outside of building. Made of heavy galvanized metal, furnished complete with water nozzles, piping, strainer and fittings.



Sparkling Teeth Sell Smiles,

Sparkling Finishes Sell Products!

You never saw the winner of a beauty contest without a winning smile glorified by beautiful teeth. Dingy teeth and beauty simply cannot go together.

Apply the same reasoning to your product. Does it carry the handicap of a dingy finish . . . or does it sparkle with an alluring refinement that makes it distinctive? One builds resistance . . . the other, acceptance.

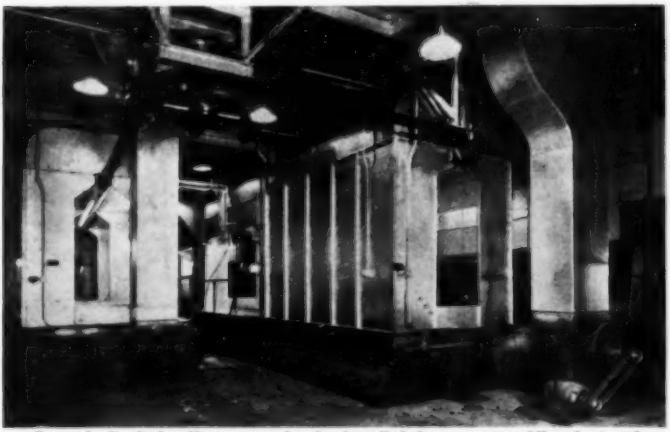
A cheap, inappropriate finish always costs far more than a good one in the final accounting.

Let our studio artists analyze the finish on your product and offer any suggestions they may consider helpful. There's no charge for this service. It may add sales appeal and reduce selling costs. Write for details.

"No tampering with quality"

Rockford Varnish Co.

ROCKFORD, ILLINOIS

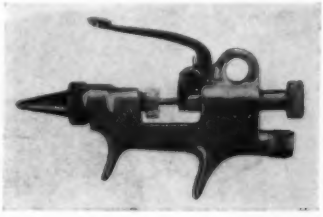


Down-draft, hydro-filter spray booths installed in an automobile plant, where small parts are spray coated on a conveyor production line. Note that the platforms for workmen are staggered in this installation, providing ideal working conditions.

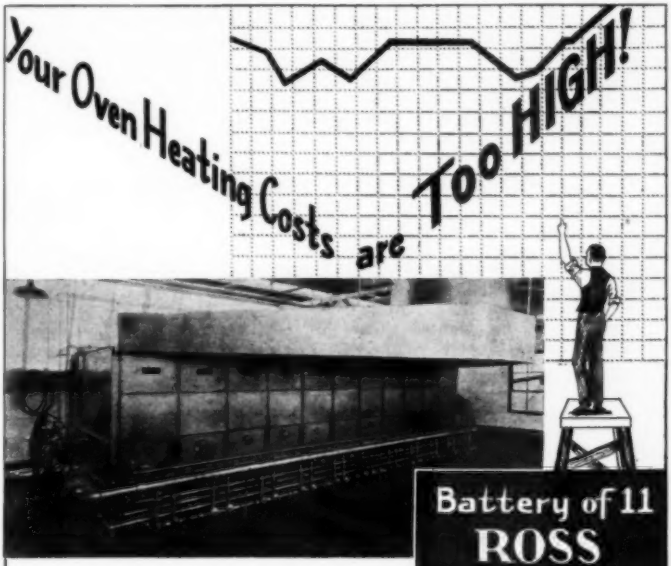
Down-Draft Hydro-Filter Spray Booths — An outstanding development in production finishing equipment . . . . used in several Detroit automobile factories and in plants making other products . . . . provides excellent working conditions for spray operators, efficient ventilating, and satisfactory means of reclaiming pigment in over-spray. Eliminates fire and explosion hazard in the exhaust chambers of booths. Protects exhaust ducts and exhaust fans from being coated. The hydro-filter chamber contains an ingenious arrangement of whirling water spray from high pressure jets, operating in conjunction with specially designed baffle plates. These hydro-filter chambers remove pigments, fumes and other combustible matter from the air. The air then passes through a battery of eliminators where the moisture is removed before it enters the exhaust fan.

Graining Equipment — Stainless steel graining plates . . . . a special alloy selected because of its exceptionally good qualities. Longer wear than any other material thus far available, and this eliminates slightly the difficulty experienced in color matching. Many new designs and effects have been developed. Among these are the various wood designs, including matched effects in walnut, maple, mahogany and others. Pleasing effects to meet any requirement are also included. Complete cooperation is offered in the development or making of any special design the customer may desire . . . .

Flow Gun (D)—Designed especially for such jobs as striping automobile bumpers, and flowing sealing compounds, cements, and other plastic materials. Gun forces materials out of nozzle directly onto the work.



Can be operated by thumb or index finger.



Battery of 11
ROSS
Air Heaters
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—COMPARE—

Why not compare your methods with those used by leading automobile manufacturers. Their costs are low!
Our engineers will gladly inspect your equipment and make helpful recommendations. There is no charge for this service. Get the facts! Write nearest office for Bulletin 122.

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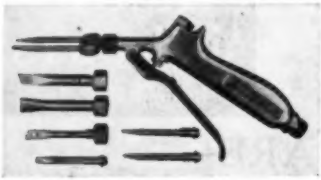
"Pioneer Builders of Air Heaters"

Since each nozzle must be designed for a particular job, it must be built according to the specifications of the user.

The gun may be made with either single or multiple nozzles which will flow any width of stripe up to 1-in., and multiple nozzles may be designed to flow parallel stripes of either equal or unequal widths. Material flow with single nozzle guns may be controlled either by regulation of fluid pressure, or by adjustment of fluid needle travel, while multiple-nozzle guns are provided with a small needle valve at each nozzle. The gun is small, light and fits the hand comfortably. It may be operated either by thumb or index finger.

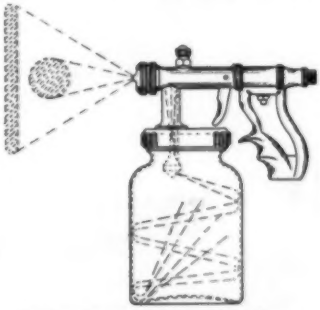
Flow Gun (B)—A gun to flow on stripes of paint, rubber cement, or other materials. Material is forced out of the nozzle directly onto the work. As shown in the illustration, special nozzles are furnished and are used according to the type of work. Other nozzles can be built according to the specifications of the user to



For flowing on single or multiple stripes of paint, cement, or plastic material.

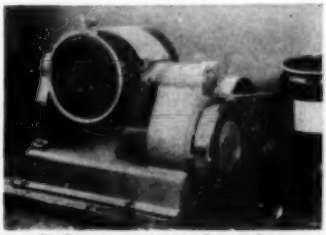
flow on any width of stripe up to 1-in. wide. The multiple nozzles shown flow parallel stripes. The gun is small, light and handy, and its full grip and 4-finger trigger is especially suited to the striping operation.

Flock, Powder or Granule Sprayer—For applying cotton, wool, and rayon flock in various colors to any surfaces. Produces attractive suede-like finishes at low cost on any material—wood, metal, paper, cloth or rubber. Ideal for applying dry powders and granules. Extensively used in coating rubber molds with dry soapstone or mica. Easy to operate; rapid; efficient. Special airtube so directs the air passing through it, that the flock is carried to the multiple-head without clogging or spitting. The pistol grip and trigger control make for easy handling, without tiring the operator. Flock passes readily without clogging, through the multiplehead, which provides a round spray or wide fan spray simply by turning the multiplehead as desired.



Sprays dry powder from container.

Paint Can Whirling Machine—A machine for shaking up the long-settled contents of a paint can of one to five gallon capacity. Has a ½-h.p. motor. Rejuvenates contents of sealed containers to original condition in three to ten minutes without opening container or marring the label on can. Smaller machines for smaller cans also available.



Shakes up contents of container.

Look to M&W For the Right Finish

The finish for a product can usually be produced in several different ways. But there is a *right finish* for each product, depending on price, usage, method of production . . . Type of material, and proper and economical application are essential factors.

To produce the *right finish* requires long experience supported by adequate research facilities. It forms a highly specialized branch of industrial engineering. Many users of lacquers and lacquer enamels look to M&W for advice on all their finishing problems.

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430 Riverside Avenue, Newark, N. J.
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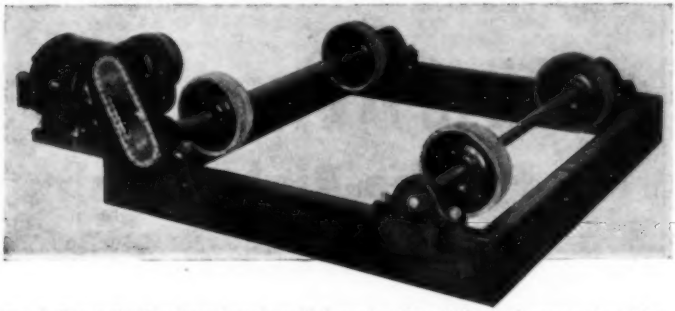


Has ball or roller bearings; base is welded construction; 44-in. each way; motor, ¾-h.p.

Drum Spinner-Agitator — A machine for rotating drums or barrels containing finishing materials to be mixed, agitated or stirred up. Drum rests and rotates upon the two driven and two idler wheels which have rubber or canvas tires. Usual rotating speed for drum, 30-r.p.m. Built and furnished to meet regular or special requirements.

Utility Abrasive Blast Gun, Suction Type—An inexpensive unit suitable for blast-cleaning all classes of work. Will clean castings of iron, steel, brass or aluminum; also the surfaces of steel, stone, wood or glass . . . An inexpensive sandblast for use not only where purchaser is limited as to price, but also in large plants where abrasive blast equipment has already been installed and where a utility gun is needed for small blasting in order to avoid starting up the larger equipment. Includes the complete gun with finger control, 6-ft. of abrasive hose, patented collector, helmet, gloves and six extra nozzles. Use your own abrasive container, such as a drum or open tank, box or cabinet, and simply fasten collector to it. Can be supplied with air tip to conform with purchaser's air requirements.

View of gun and extra nozzles.

Cleans Metal by "Rotoblast" — A blast-cleaning machine adaptable to all types of work; it entirely eliminates the need for compressed air as the abrasive driving agent. Instead, a rapidly spinning wheel propels the abrasive by controlled centrifugal force. It is this feature that gives the new unit its name, "Rotoblast." Is recommended for use with barrel blasts, table blasts, special cabinets and similar equipment. Loads of castings weighing 1800-lbs. have been thoroughly cleaned after eight minutes of blasting.

Blast-cleaning Room — Complete outfit includes:

1) Metal-lined room in which helmeted operator directs nozzle of hose that sprays forth particles of abrasive to clean the surfaces of metal parts resting upon a truck or transfer car.

2) Bright illumination from above.

3) Self-closing, tight-fitting doors at side.

4) Perforated floor plates through which spent abrasive drops into recovery hoppers.

5) Automatic conveyor system for returning recovered abrasive to separator and cleaner, preparatory to using it again.

6) Blast machine which furnishes the air and force to drive abrasive through the hose and against surfaces to be cleaned.

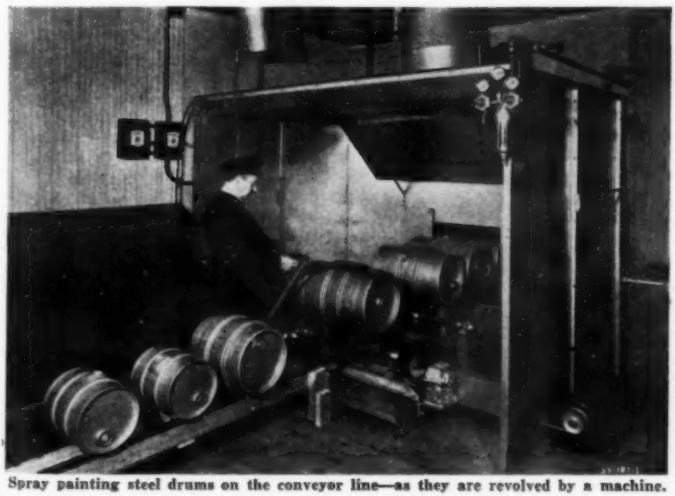
7) Down draft ventilation.

The ruggedness and stability of the blast room's construction assures uninterrupted performance.

Sprays Drums or Barrels—A unit for rapidly spray painting the outsides of kegs, drums, barrels and similar wood or metal cylindrical containers. The barrel to be sprayed is fed onto the revolving mechanism by gravity through an adjustable opening in the rear of the spray booth. The barrel then rests on the revolving sheeves, which are adjustable for all standard sizes of barrels. The sheeves are revolved by an enclosed motor . . . . speed can be adjusted for the various barrel diameters. An operator sprays finishing material on the barrel as it revolves. A pull on the lever rolls the painted drum forward onto a conveyor, and the next barrel in line then takes its place on the revolving mechanism. From actual tests it has been found that more than 200 barrels can be painted in an hour this way.

Recover Old Solvents—If you use solvents for cleaning metal parts preparatory to finishing, or for cleaning spray guns, containers, or other equipment, you can restore them to their original state of cleanliness and purity by putting them through a solvent recovery still.

A batch of used solvent is fed to the evaporator. There it is brought to the boiling point by heat from the steam coils (stills can also be furnished for either gas or electric heating). Distillation sends the pure, clean solvent vapors up around the baffle and through the vapor pipe into the condenser. The baffle prevents splash and entrained liquid

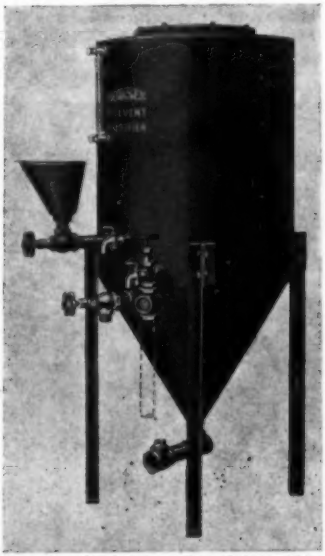


Spray painting steel drums on the conveyor line—as they are revolved by a machine.

from going up with the dry vapor. Any condensate forming in the vapor pipe drops back through the central drain of the baffle, clear of the rising vapor.

In the condenser tubes, the vapor is condensed into distilled pure solvent which passes out through the auxiliary cooler and is ready for use again. Dirt, oil, grease and foreign matter remain in the evaporator and may be flushed out at the end of the cycle, and the process repeated.

Solvent Purifier—For cleaning and purifying solvents that have been used in metal cleaning. Completely restores the dirty solvent to the same condition as when new. Operation of the unit is simple. A chemical charge, in accordance with the operating instructions, is placed in the purifier. One charge is sufficient to last a week under ordinary conditions, and need not be removed or replaced until its strength has been exhausted. The dirty solvent is then pumped into the purifier . . . . and is thoroughly agitated with the chemical charge for the required period. This agitation of the dirty solvent with the chemical charge results in the saponification of the greases, coagulation of the dirt, and collection of any coloring matter. As a result of this action the impurities, in their combined and changed form, have sufficient weight so they readily precipitate out of the solvent. Removal of these impurities restores the solvent to its original state of purity and cleanliness, and it can then be returned to a clean storage tank.



Cleans used solvents and naphthas safely and economically.

Striping Tool—Made in two models each of which is furnished with extra striping wheels, guides, cleaning brush and instructions—all placed neatly in a leatherette case. The Craftsman model is furnished with two striping wheels and five adjustable guides. The Delux model is furnished with three striping wheels and eight adjustable guides. Either tool can be used to stripe flat or curved surfaces in any position.

New Striping Tool—A precision machine consisting of a hardened machine grooved wheel mounted in a striping assembly which contains a valve that allows the striping material to flow through this assembly to the wheel. This wheel carries the paint to the article to be striped in a uniform manner, depositing the paint on the surface being striped. The paint is carried in an aluminum cup having in its cover a vent-hole which is closed when the tool is not in operation. The guide for this tool is of unusual construction, being so arranged that there is only one thumb-nut for adjustment. This guide can be adjusted up and down, and in and out, on the main body of the striper, to take any type of automobile molding or other surface. The two points which guide the tool on the molding, or against a straightedge, are ball-bearing so as not to mar the finish being striped. The

Out of years of experience . . . a new MAPLE *finish*

stain and glaze in ONE OPERATION

2-Tone pigment stain . . . spray, dip or brush . . . non-settling . . . little wiping . . . glaze effect in wiping . . . seal in four hours . . . then follow with stainproof gloss or flat lacquer (see below) and you have a finish that is beyond comparison. Smooth, uniform, and clear as crystal, it makes a piece of maple even more attractive and durable. Opportunity to see this finish was afforded at the Furniture Shows and many became vitally interested. So will you when you see a finished panel.

Walnut and Brown Mahogany Stains also provided in this same line, enhance the richness of your finish, eliminating some costs and affording a permanent color. Apply on Walnut, Mahogany, Gum, Maple, Birch, Tupelo, Basswood. Excellent for uniforming Oak and Ash. Shades as desired.

Also

Stain-Proof LACQUERS

Here is a sure finish absolutely resistant to alcohol, liquors, etc. It meets the challenge for a full-bodied quality finish . . . with lowest cost. Available in gloss, gloss rubbing and rubbed effect. For all furniture including table tops, bar tops, etc., etc.

And

One-Coat Transparent Colored *Finishes*

Quick - drying lacquers that give the efficiency of colored filler and clear lacquer over sealer. High gloss and rich colors. Here are provided one - coat, transparent colored finishes for oak dinettes and breakfast sets, and similar items, formulated and priced to meet your current product finishing needs.

Write Now!

CUDNER & O'CONNOR CO.

4335 West Kinzie Street, Chicago, Illinois

Manufacturers of Paints, Varnish, Lacquer and Allied Specialties

entire guide swivels so the operator can stripe from above or below the molding.

Anyone, with very little practice, can learn to operate this striping tool. The stripe is always uniform

in width and thickness, regardless of the speed with which the tool is operated. The resulting stripe is permanent, for the striping material can be used much heavier than with the brush. It is not necessary, however, to have the paint of a certain viscosity. A viscosity of about the consistency of coffee cream is recommended for average work. . . . Used in daily production by ten large automobile companies.

M-S-A Comfo Paint Respirator—(Twin cartridge type.) Efficient protection with low breathing resistance as a result of the increased absorbing area . . . . light, well balanced weight and comfortable wearing qualities as a result of the improved design . . . . respirator is easy to put on and adjust; fits any face with a perfect gas-tight seal, and permits full vision and unhampered working freedom. It utilizes the popular Comfo facepiece. Replaceable all-metal cartridges are new and improved. Paint vapors and particles of pigment are removed thoroughly, and the life of each cartridge is increased, assuring high protective efficiency over a long period of time before replacement is necessary.

Respirator No. 400L—Has a filter bag through which breathing very close to normal is assured. This because of very large filtering area of 40-sq.in. Face mask is made of rubber and is adjustable to any shape of face by bending a wire forming spring which constitutes a part of the lower mask edge. Filter bag is assembled on the mask by means of a screw ring inside of which is the

The respirator bag can be cleaned by blowing compressed air into it.

intake valve assembly, including moisture baffle, serrations to prevent air lock, and a flexible intake diaphragm. Air is drawn in through the filter bag at front and exhausted through the valve assembly below the face mask. Filter disc replacement problem is satisfactorily solved by the use of this cleanable bag type filter which, in most cases, lasts as long as the respirator itself. The complete respirator weighs only 5¼-oz.

Dupor Respirator—Has enlarged adjustable filter chambers of screw-cap type, and the very large filter aperture of 16-sq.in. Weight, only 4½-oz. The threads extend clear across the rim and the lid screws clear over and beyond. . . The new thumb rest, placed on the side of the bottom of the box, is used in a novel way to replace filters in this

Save $230.00 a Year on Each Airfinishing Booth

NEW

Paasche DEVELOPMENT

A Real Self-Cleaning Airfinishing Booth That

eliminates all cleaning costs for labor and solvent; banishes fire hazards.

Paasche Self - Cleaning Booths—For Lacquer, Synthetic Enamel, Paint, Etc. —Available in Varied Sizes and Styles to Meet Your Individual Production, Finishing, and Reclaiming Requirements.

For the greater savings and greater safety, investigate this entirely new type of airfinishing booth. Possessing all the advantages of the oldstyle booth, it offers new improvements of vital importance to finishers.

Because of the Self-Cleaning Principle, all solids and dust are eliminated, only the fumes are exhausted to the outside of the building. No material, that might cause fire or explosion, is allowed to get into the sewers. PRACTICALLY EVERY FIRE HAZARD IS AVOIDED. It carries the usual Underwriters' Label and meets every safety and health requirement.

Few developments in the airfinishing field have met with a quicker response than this new Paasche Self-Cleaning Booth. Whenever its advantages have been analyzed and its savings studied, its purchase has been inevitable. Let one of our engineers demonstrate how the installation of this booth—with its self-cleaning features—will pay for itself in a single year through savings on labor and solvent cleaning costs.

Send for Bulletin A1-36.

Paasche Airbrush Co.
1917 DIVERSEY PARKWAY CHICAGO

Pioneers of Manual and Automatic Airfinishing, Aircoating, Airrubbing, Portable Airpainting Units, Airfinishing Booths, and Fireproof Ventilating Equipment.

respirator. This construction enables the box to be half as thick and reduces weight, which is very important in respirators. Also, provides better vision.

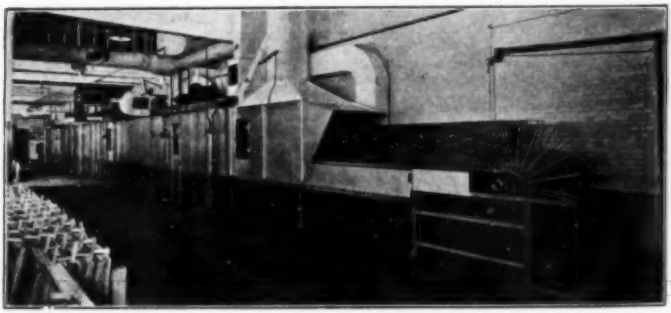
Is reversible . . . collapsible for pocket or box, and is very comfortable.

Metal Decorating Oven—A conveyor oven through which freshly finished parts are passed to bake the finish according to whatever time and temperature schedule is desired. The source of heat is a Ross-Harrison air heater of either the direct type, in which products of combustion pass into the oven, or indirect type, in which only clean fresh air enters the oven. Gas or oil burners may be placed on the floor alongside the oven, or on a platform above the oven. Heaters and burners are provided with all the necessary safety devices. . . . The oven is divided into several controlled zones, the number depending on its length, each zone being provided with its individual circulating fan, thermostatic control and distributing duct work. A hood at the loading end prevents the escape of volatiles and hot air into the room. At the end of the hot zone, a cooling section is provided.

Economy Bake Oven—A direct gas-fired oven installation developed for the small manufacturer who wants to use baking synthetic enamels to finish ice cream coolers, refrigerators and other products, but who can afford only a limited investment.

Contrary to ordinary practice when processing synthetic enamels, a direct gas-fired heating system of the externally-mounted type is employed in connection with a high-capacity recirculating ventilating system. The installation is equipped with all the approved safety-control devices; oven is amply vented, in accordance with fire underwriters' requirements.

A standard arrangement of heating and recirculating ducts in the oven insures uniformity of temperature in the interior within 10°F. of



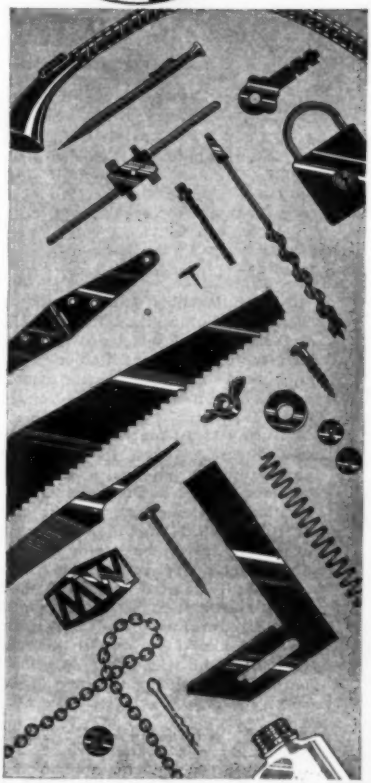
An interesting perspective view of the oven from its unloading end, showing zone circulating fans, cooling zone hood, "cold air" fan to cooling nozzles, and conveyor.

the JETAL process

a simple way

to BLACKEN

Iron and Steel



THE Jetal process colors iron and steel products at low temperature, by immersion, to a uniform and brilliant black. It is a complete finish in itself and will not chip, scale, peel or discolor. It replaces more involved and expensive black finishes and forms an excellent bond for subsequent finishes such as japan, lacquers, varnishes, enamels, etc., that require high temperatures.

Ask for descriptive circular and send samples to be JETALized.

ALROSE CHEMICAL COMPANY

Executive Offices — 80 Clifford St.

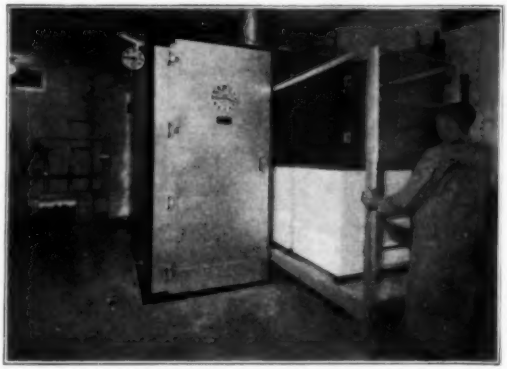
PROVIDENCE, R. I.

Also Distributed by

HANSON-VAN WINKLE-MUNNING COMPANY, MATAWAN, N. J.

the thermostat setting.

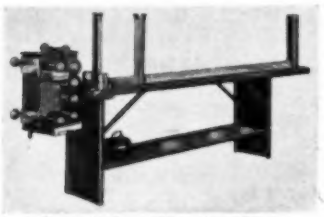
Exhaust of the volatiles from the oven is by natural draft only. Definite control of the air leaving the oven is obtained by regulating dampers which the operator may vary to meet the changing baking conditions.



In operation, the synthetic enamels are sprayed on the parts being processed and loaded on large trucks. These trucks, when filled, are pushed into the oven, which has capacity for two at a time. When the baking time, which is usually one to two hours, is completed, the trucks are pulled out of the oven and other trucks pushed in.

This modern convected air-heating and ventilating system may be applied to larger installations of the batch type, and also the continuous conveyor type. . . .

Rollacoat Slat Finisher—For coating Venetian-blind slats on four sides in one pass through the machine. Easy adjustment for different thickness coats; a separate handwheel for each roll, holding same in constant alignment. Equipped with ball-bearing speed reducer and Underwriter's approved explosion-proof motor. Manual or automatic feed optional. Automatic feed requires no adjustment for feeding 1¾, 2, or 2¾-in. width slats in any length from 2 to 16-ft., at a speed of from 85 to 125-ft. per minute.



It coats four sides at a time.

Dipping Machine Sticker Boards—The manufacturer of an automatic dipping machine, designed particularly for handling small wood parts, announces improved sticker boards with carbon-steel needle-pointed pins. He says:

"During 1935 I found a great many small items in wood to be finished on the dipping machine such as pen holders, artists' paint brush handles and similar items, and to take care of this work I was obliged to improve the sticker boards of the dipping machine by using high-carbon steel needle-pointed pins. With these extra fine high-carbon steel pointed needles, workmen can fasten the smallest kind of a wooden piece or turning to the sticker boards without harming or splitting the item in any way."

Roller Coating Machine—An improved, practical, and compact motor-driven machine for applying liquid finishing materials to sheet stock or strip stock by means of rollers, as in printing. Adjustments are

They go after the BRIGHT *ones!*

OF COURSE, this refers to your fishing tackle. But the same thing holds true with your product.

For many years, we have sold EGYPTIAN LACQUERS to manufacturers of fishing tackle for finishing lures. We have likewise sold lacquer to a highly diversified list of industrial manufacturers for finishing their products. In the one instance we helped the angler to catch fish and in the other case we helped the manufacturer to attract customers.

We have just published a new color book showing forty-eight of our standard shades of lacquer enamels. This book also contains valuable information covering the use of Egyptian Enamels. We will be glad to send you one free of all charge. Ask for your copy today.

EGYPTIAN · LACQUER

THE EGYPTIAN LACQUER MFG. CO. ● 90 WEST STREET, NEW YORK

Operates quietly, smoothly, economically.

provided for regulating the flow, so as to put on a uniformly-spread, light, medium or heavy coat. The speed at which stock feeds through the machine is also adjustable to suit shop conditions and production requirements. This machine utilizes a simple principle whereby lacquer or other coating material is carried from a reservoir onto a roller revolving therein and then over a train of rollers onto the sheet being coated. The machine will usually coat any stock from very thin rigid or semi-rigid sheets up to material 1-in. in thickness and as wide as 44-in. It is entirely practical to coat metal or other material. All that is necessary is to provide suitable means for handling the material at the infeed and outfeed ends.

Gang Mixing Tanks—For production work requiring the spraying of certain products in different colors . . . . a series of mixing tanks, each containing a different color, as the working supply of finishing materials. Paint in these tanks is kept in a constant state of agitation by an agitator in each tank. A separate paint-circulating pump is used for each tank. Paint is pumped from a bottom outlet of the tank. After having been projected through the spray nozzles, any material that fails to adhere to the product being finished is reclaimed in a tank and, after having passed through a filter for cleaning, is recirculated back to a top inlet in the mixing tank.

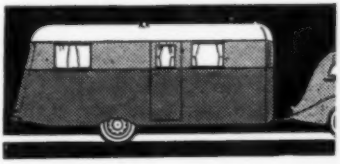
Material savings are made through the use of paint-circulating systems by avoiding paint losses at the booths. This loss occurs on color changes.

Tank capacities, 18.7 gallons each; pump motor, ½-hp.; motor to drive mixers, ¼-hp.

AND NOW

"COVERED WAGON" ADOPTS

BERRY FINISHES



● Eloquent proof of the extreme durability and rugged performance offered by Berry Brothers Finishes is found in their acceptance by yet another trailer manufacturer — the Covered Wagon Company of Mount Clemens, Michigan. This widely advertised concern, operating its own production line, uses and recommends Berry products for their remarkable economy — lasting beauty — and absolute dependability.

BOXX Primer and Surfacer, Amberry Speed Line Enamel, and Berry Brothers Interior Finishes are used with outstanding results by this company. And for the solution of your problems Berry offers a complete line of finishes plus the active help of experts trained to cope with the most perplexing industrial finishing problems.

Take advantage of this offer now! Save money! Increase plant efficiency. Speed production. Improve the appearance of your products. For complete information address:

BERRY BROTHERS

PAINTS • VARNISHES • ENAMELS • LACQUERS

DETROIT, MICHIGAN ★ WALKERVILLE, ONTARIO

Power-Flex Polisher—A portable outfit consisting of a swivel-mounted motor supported by a stand having swivel casters, the motor driving a flexible shaft to which can be attached polishing discs, as shown in the accompanying illustration. Has a variety of applications including sanding, grinding and drilling. Plugs into electric socket wherever needed.

Buffs or polishes finished surfaces.

Balance Scale—A balance scale of great accuracy . . . . weighs up to 100 grams and has a sensitivity of 1/100th of a gram. It is a rugged, compact device, less than 1-lb. in weight and about 12-in. long. There are no loose weights to be lost. It has an alloy steel knife edge and a highly polished agate bearing which make for great sensitivity and durability.

Impregnating Machine—(Centrifugal hydrostatic impregnator.) A machine in which are placed articles having porous surfaces to be impregnated with liquids such as waterproofing compounds, sealers, oils, waxes, varnishes, lacquers, etc.; for example, articles made of wood, paper, fiber, fabrics, leather, or coils of electric wiring. Effects impregnation first by the passage of fluid through an article in one direction; then positively drains it to the desired degree by passing the fluid through it in the opposite direction. Contributing factors are under precise control. The bowl of the centrifugal machine may be filled with fluid and rotated to create centrifugal force acting radially from the axis of rotation sufficient to produce a predetermined pressure.

Typical examples in wood:

1) Black walnut brush backs. Instructions: "To be water resistant. Use linseed oil." Time required by this process, 20 minutes; take-up, 34.6%. Time previously required, 48 hours by soaking.

2) Gumwood. Instructions: "To be impregnated with . . . . wax." Time required by this process, six minutes at 212°F.; take-up, 49%.

Centrifugal hydrostatic impregnator.

ONLY THE BINKS GUN

THOR Model 2

CAN GIVE YOU ALL 5

1. Drop Forged Bronze Body . . .

Bronze used for greater tensile strength; permits machining to closer limits; prevents springing and eliminates misalignment of parts. Forging assures no sand holes or blow holes in material.

2. Tapered Seat Nozzle Alignment . .

The identical taper on the outside of the fluid nozzle is machined on the inside of the air nozzle assuring the proper relation between fluid nozzle opening and air nozzle orifices.

3. Standard Pipe Threads . . .

All Binks equipment fitted with standard pipe threads; any fittings required in an emergency can always be procured locally because of this feature.

4. Micrometer Spray Adjustment . . .

Permits fine adjustments from small round spray to wide fan shaped spray with all widths in between available. Always located at the back of the Thor Model 2, a feature that has been widely imitated, the spray adjustment has been improved; it remains close to gun body.

5. Auxiliary Air Nozzle Openings . . .

These openings permit jets of air to leave the gun parallel to the center jet of atomized material. Strictly a Binks development amply covered by our patent.

Send for Latest Bulletin on Thor Model 2 Gun. Shows Best Nozzles for Synthetic Enamel.

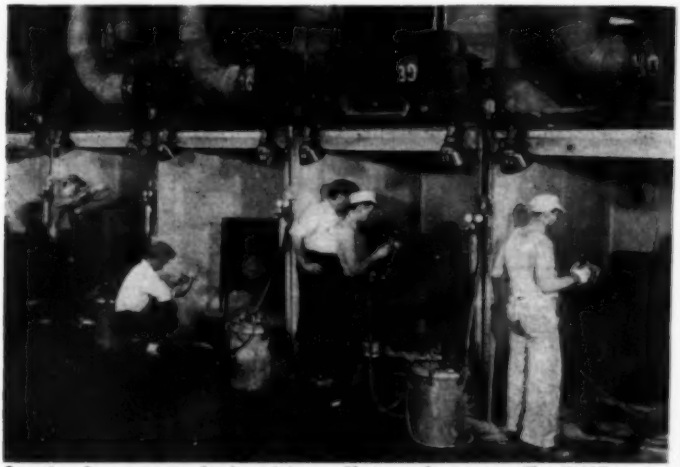
BINKS MANUFACTURING CO.

3105-50 Carroll Avenue Phone: Van Buren 6310 Chicago, Illinois

New York: 126-30 Lafayette Street Phone: Canal 6-4640

Detroit: 2530 East Grand Boulevard Phone: Madison 7287

San Francisco: 923 Harrison Street — Phone: Sutter 5289



Spraying from pressure-feed containers. Photograph, courtesy The DeVilbiss Co.

Pressure-Feed Spraying

A discussion of the merits of modern pressure-feed spraying as compared to gravity-feed and suction-feed spraying . . . by a well-informed man with nationally known manufacturer of spray finishing equipment & accessories.

IN INDUSTRY today, at least three-fourths of the spray-finished products marketed are finished by the pressure-feed system. Automobiles, mechanical refrigerators and other metal products in large scale production, require a combination of high quality finish and speed of output. The pressure-feed system is a satisfactory solution to this problem.

In the woodworking field, including furniture manufacturing, the gravity system is still used in many plants because its lower first cost seemed to be considerably in its favor. However, quality furniture, which requires a high-grade finish, is usually finished by the pressure-feed system, as also are radios. The gravity-feed system would be impractical for such work.

Suction feed (from a cup attached to the spray gun) is confined largely to light production and touch-up work.

Some of the larger industries have installed pressure-feed paint-

circulating systems, thus eliminating the tanks at the spray booths, but in the smaller plants the familiar pressure-feed tanks are in evidence at the booths.

In numerous ways, pressure feed is better and more efficient than other systems. Among its advantages are the following:

1) Handles larger quantities of material.
2) More complete agitation is possible.
3) Unlimited speed of operation.
4) Constant material flow, due to constant pressure.
5) Material is kept cleaner. The system is cleaner to handle.
6) Less fire hazard.
7) Few accidents possible.
8) Easier to control.

The lower original cost of the gravity-feed system installation seems to be the only thing in its favor. The speed, efficiency and lower cost of operation of the pressure-feed system soon compensate for the slight advantage of lower original cost of the gravity system. And consequently, the gravity system becomes the more expensive to operate.

Compared to the modern, efficient and safe pressure-feed system, the obsolete, uncertain and uncontrollable gravity bucket has many disadvantages. Among these are:

1) Inconveniences of lifting a container of finishing material by means of block and tackle.

Where workmen spray from gravity-feed containers. Photo courtesy The DeVilbiss Co.

An example of suction-feed spraying where material is in a cup attached to spray gun. Photograph, courtesy The DeVilbiss Co.

2) Precautions necessary in locking the rope or cable holding the container, or the necessity of tying it to some firm object.

3) Fire hazard involved.

4) Danger of tipping, with consequent wastage of material.

5) Lack of proper agitating means for materials requiring agitation.

6) Loss of speed of operation and consequent production, due to the variation in the flow of material from buckets at different heights and with materials at different levels in the buckets.

7) Lack of flexibility for the use of gravity feed with materials of various viscosities.

8) Limited production possible.

9) Limited size of gravity-feed containers.

The pressure-feed system requires no more air for its operation than does the gravity system. It is easier to refill a pressure-feed tank than to lower, refill, raise and secure a gravity bucket. There is no more technique required in pressure-feed application than in gravity-feed application. What is proper in one case is proper in the other. Wherever gravity feed can be used to advantage, pressure feed offers still greater advantages.

Speed-Bloc Sander Catalog

The Sterling Products Co., 320 Curtis Bldg., Detroit, Mich., has just published an attractive and informative catalog which illustrates and describes completely the company's portable air-driven Speed-Bloc sander for dry or wet sanding on flat or curved surfaces. Additional items included in the new catalog are: a filter trap, air-pressure regulator and automatic lubricator—the latter for supplying lubricant to air-driven tools such as the Speed-Bloc sander. The catalog consists of 12 pages, 6x9-in. in two colors.

Compressed Air Units Bulletin by Paasche

A new illustrated bulletin of complete data about air-painting compressor units of various capacities, and portable spray-painting outfits, has just been released for distribution by Paasche Airbrush Co., 1917 Diversey Parkway, Chicago, Ill. The bulletin contains considerable engineering data, specifications and cross-sectional cuts of air compressors—information that should be in the hands of every user or prospective user of air compressors or spray-painting equipment. Illustrations showing industrial spray-painting and air-powered rubbing machines in service are also included.

Letters from Readers of "Industrial Finishing"

The names and addresses of firms or individuals whose letters and inquiries appear in this department may be had by writing this office, or letters addressed to them in care of this office will be forwarded promptly.—The Editor.

Handle Lacquer

Can you furnish us with the names of several manufacturers who can supply a very cheap, cream-colored lacquer for use in coating hickory axe handles by dipping?—K. M. T. Co. (Mountain Hickory Axe and Tool Handles, Base Ball Bats).

Rubbing Oil

We are desirous of procuring the name of an organization where rubbing oil can be procured to reduce the sheen after the final varnish.—F. W. Co. (Wood Products).

Baby Shoe Paint

I wonder if you could give me any information relative to a metallic paint or coating which is now popularly used in coating baby shoes and other leather articles? The coating gives a hard metallic finish not common to bronzing powders, etc.—L. S. & B. (Display Advertising).

Wire Hanger Finish

I propose to manufacture an article from No. 12 galvanized wire and desire to coat it with a finish equally as durable as that placed upon wire coat hangers. I prefer a light color, either cream or ivory. I will appreciate your placing me in communication with some firm that can supply the proper material with instructions for correct method of application.—W. M. L.

Masking Tape

We are using a large quantity of masking tape, as made by ——— for the purpose of covering a finished article of furniture, leaving openings for stripings. We have not been able to find anyone else who makes this. Can you give us the names of other producers?—D. H. B. Co. (Chair Mfr.).

Graining Paper

Kindly advise us where we might find a source of supply for graining paper.—N. Paint & Supply Co.

Japan Plastics Journal

Having learned your esteemed name and address from the day when we felt interest in Plastics, we now beg to advise you that we have just established ourselves as a publisher of a leading journal in this very line under the name of "Nippon Kasakubutsu Simpoh" in Osaka, one of the most important industrial centers in Japan. We feel sure this is quite opportune when this very line of industry is growing important for the development of all other main lines, as shown by special care the Japanese government is paying of.

This branch of industry has developed with leaps and bounds in Japan, yet there are still much to be taught by your country, while we think there may be something on our side to give you suggestions for your further development.

In this light we have determined

Gettner Universal STRIPER

A Precision Tool Which Anyone can Operate

This striping tool has been adopted as the standard by several large automobile companies, and is being used in daily production. It is truly a Universal Striper for use on autos, furniture, toys, trucks, railway coaches, busses, signs, machinery, fabrics, rubber, leather and all other articles requiring decoration. Price Net with quick interchangeable striping assemblies, 1-32-in., 1-16-in., 3-32-in., $28.00.

Write today for Bulletin B-79.

K. H. Gettner Shop

4210 Grand River Detroit, Mich.

(Jobbers Solicited)

This half of Auto Fender was CLEANED with a Magic Tack Rag before finishing. Note the smooth, deep luster. No blemishes, specks, lint or sand particles to mar the finish.

"MAGIC" TACK RAGS IMPROVE FINISH 100%

MAGIC TACK RAGS clean every surface before finishing—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

Wm. A. Juergens Co.

4036-40 Lagrange Street, Toledo, Ohio, U. S. A.

If your dealer does not carry Magic Tack Rags, write us for sample.

to publish a new journal, a copy of which we are sending you under separate cover. On the other hand we shall be much obliged if you will kindly do us a favor by giving us your papers or journal at your every publication. Leading mills and merchants in Japan are eagerly supporting us for the general development of this branch of industry, and to this same object you will please afford us with your utmost assistance in every respect. . . .—Nippon Kasakubutsu Simpoh.

Small Dipping Machine

We are interested in obtaining a small automatic dipping machine for laboratory use, and, if our memory serves us rightly, an advertisement of such a machine appeared in INDUSTRIAL FINISHING some time in the past. Any information you might be able to give us regarding this, such as names of manufacturers, etc., will be appreciated.—P. C. F. Co. (Pyroxylin Products).

Luminous Paint

Please send me information immediately on the non-poisonous luminous paint mentioned in your April 1935 INDUSTRIAL FINISHING magazine. The name of the paint was given as "Dialux." I would like to know where I can get this paint and what the price of it is. I am interested in the type for use on cloth.—L. F. J.

Automatic Sander

At the suggestion of the duPont Co. we have been prompted to ask you for a list of manufacturers of automatic sanding equipment, particularly a concern in position to manufacture equipment suitable for sanding artists' brush handles.

We would appreciate receiving a copy of your INDUSTRIAL FINISHING, together with subscription rates. . . . —B. A. Co. (Brush Mfr.).

Dipping Machine

In the December issue of INDUSTRIAL FINISHING, on page 49, we notice a request by "J. S." for a second-hand dipping machine. We do not have a second-hand dipping machine, but we are now starting to manufacture an inexpensive ma-

WATEROIL STAINS

have won National Approval

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chine for dipping small parts. . . . We would like to have you send us a few samples of the things you intend to dip, if they are not too large. We have been using this finishing machine for some time, and we have something for dipping small articles that surely has proved a wonderful success. . . . It is so simple that we believe it will be a very good article for the market.—Northern Machine Mfg. Co.

Etching Steel

The writer is investigating the commercial possibilities of a certain application requiring stainless cutlery steel having an approximate analysis of 18% chrome and 0.7% carbon. This steel will require etching on a bright tempered surface.

I would appreciate receiving your recommendations as to the best method and material for doing the etching. The etching, in this case, would be required to be of medium depth. Is it possible to secure an etching material for the purpose made up in paste form so that it can be applied with a stencil?—M. F. W.

Detroit Rex Products Co. News

W. W. Davidson, vice president and sales manager of Detroit Rex Products Co., 13006 Hillview Ave., Detroit, Mich., announces the opening of a new branch office at 201 North Wells St., Chicago, Ill., to cover the states of Wisconsin, Illinois and Missouri. The representatives placed in charge of the territory are G. P. Anstiss, S. B. Crooks and C. L. Jung.

Frank P. Cox, an outstanding authority in the metal cleaning industry, has been placed in charge of alkali cleaners and strippers. Mr. Cox, from his headquarters in the Detroit office, will supervise the sale and service of alkali cleaners throughout the country.

George W. Walter, formerly editor of "Metal Cleaning & Finishing," has been appointed advertising manager for the company.

During the past year, Detroit Rex Products, formerly known as Rex Products & Mfg. Co. has vastly increased its sales and engineering forces; also expanded its line of cleaning equipment and extended its service in the metal industries. This company produces Detrex degreasers and solvent machines, Triad and Perm-A-Clor non-inflammable solvents, and Triad alkali cleaning compounds.

Wood Bake Finish

Recent discussions in the Question & Answer department about the possibility of baking an enamel on wood turnings, are interesting. We know of many wood handle manufacturers who coat handles in black enamels and japans, and bake at 250°F. for about four hours for each coat. The usual procedure is to first bake out the bare handle to remove excess moisture; then, as soon as the handles are cool enough to handle, put on the first thin coat of filler. This method lessens the tendency of blistering when succeeding coats are applied.—HILO VARNISH CORP.

Rusty Iron Finish

Referring to G. N. Furn. Co's. inquiry in Dec. issue of I.F., page 48, about how to produce what is known as a "Rusty Old Iron Finish," this finish, as we make it, consists of a base of black lacquer into which is mixed a substantial quantity of dry burnt sienna, burnt umber and red oxide. The quantities of dry pigment and the proportion of one color to another depends largely upon the particular effect desired. If a very red iron rust is desired, less burnt umber and more burnt sienna and red oxide is used, possibly with the addition of some Venetian red. If a darker rust is wanted, the proportion of burnt umber is increased.

After mixing in the dry pigments, the lacquer is thinned down to spraying consistency and applied by spray. The surface will dry flat and rather rough, thus simulating a well rusted surface. It will dust to some extent upon rubbing just as iron rust does. This dusting, however, can be controlled according to the amounts of dry pigment embodied in the lacquer. Naturally, the more pigment in proportion to the lacquer, the greater will be the dusting. If desired, just sufficient pigment can be added to give the effect of old rusty iron, and yet prevent dusting.

Such qualities as adhesion, durability, etc., depend, of course, upon the type of lacquer used as well as upon the amount of pigment added, and for this reason we believe that a specially formulated black-base lacquer should be employed, since the average lacquer will not adequately hold additional quantities of dry pigment.—A. F. BYERS, Benjamin Franklin Paint & Varnish Co.

Questions « Answers

Cleaning Metal Sheets

A published Question and Answer on this subject, which appeared some months back, prompts me to add a few comments based on my own experience along this line. The inquiry referred to "a quantity of plain flat panels made of No. 22 gauge auto body stock, the average size of which is 30x50-in. The majority of these panels are finished with two coats of high-bake black japan, but quite a number are finished with

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three coats of high-bake white enamel."

These panels come to the company well oiled to prevent rusting. The cleaning operation includes: 1) A "burn-off" in an oven where they are baked 500°F. to burn off the oil, 2) sanding with No. 7/0 sandpaper to loosen and remove deposits, 3) rinsing with solvent naphtha, and 4) dusting off with a brush just before application of the finish. The company asks for a more efficient method of cleaning these metal panels—one that will give even more positive results.

During my many years as superintendent of a large enameling plant, I have been confronted with similar problems many times and have experimented with one method after another until I finally decided that a hot caustic bath, a hot water wash, and a naphtha dip produced the best results. The hot caustic solution cuts and loosens the dirt and oil, removing it from the pores of the metal. The hot water bath removes all saponified coating or film that may remain on the surface. The final naphtha dip, with its quick evaporation, leaves the work dry and ready for the enamel. This requires three operations and, probably with the three tanks, it may take up more floor space, but from my experience it is positive and far superior to the method that this concern is now using.

When you bake the oil coating at 500°F., granted that this oxidizes and burns off much of the oil, the heat solidifies that part of the oil coating which is in the pores of the metal. This remains there regardless of the sanding and naphtha bath, only to show

itself as a fine dust after the coating is applied. When these porous particles come into contact with the enamel they immediately absorb the solvent in the material, thus becoming enlarged to such an extent that they are quite prominent in the enamel coating, giving it a dry and specky appearance. The result of this cleaning method is always conjectural.

Recently I came across a comparatively new method of cleaning, or "degreasing" as the manufacturer calls it, and I think it might work out very well in solving this problem. It employs a hot solvent to clean and dry the work, the manipulation being done in one tank. The tank can be made to the required size; its construction is very simple. The solvent is supplied by the manufacturer.

The partly divided tank contains a hot and a cold solvent, with an encircling cold coil inside the top for condensing the vapors, causing them to drop back into the tank.* The work is submerged in the hot solution which removes the grease and the dirt, then dipped in the cold bath to remove the residue. It is then returned to the hot solution and gradually drawn up into the vapors where it remains for a few seconds to wash off, through condensation, any foreign substance that may remain on the surface.

*One half of the tank contains hot solvent which is heated from below. The other half contains cold solvent. To clean the tank the cold solvent is drawn off. Then, gradually, through condensation the hot solvent is transferred into the cold chamber, leaving the sludge and dirt separate in the hot chamber, from which it can be removed. The solvent remains perfectly clean and can be used over and over again. Very little, if any, is lost through evaporation or waste.

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- Has wide use and varied application. Is now being used effectively over a wrinkle finish to enhance its decorative appearance.

Chart showing full line of colors or a finished sample will be sent on request.

H.V.Walker Co.
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"THE METAL CLEANING HANDBOOK" is intended to provide a ready reference and guide for the use of those directly interested in or concerned with metal cleaning.

To these, a limited number of copies are available. A request on your business letterhead giving your official title or position will bring a copy. To all others, a copy will be sent on receipt of the nominal sum of $1.00 to cover the cost of publication.

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Every piece of work comes out perfectly dry and clean due to the high degree of heat far above the point of evaporation. After cooling, it is ready for the enameling process, being perfectly clean—provided the room is reasonably free from dust. This process, to my knowledge, is being furnished by two concerns, the names of which I will be glad to supply upon request.—CHARLES F. MOSS.

Enameling Turnings and Wood Toys

HIGH GLOSS finishes on toys and novelties are usually produced by applying one or two coats of enamel or else one coat of enamel followed by a coat of clear varnish or lacquer. Application is made by dipping, spraying or brushing—which ever proves most suitable.

These enamels consist of "lake" pigments ground in varnish or in lacquer. The requirements are bright color, high hiding power, smooth flowing, high gloss and rapid drying. Often to speed up production the product is dried in varnish kilns at temperatures from 100° to 120°F.

A very high grade of enamel finish is produced on some turned work by using baking japan. A bake oven operated at a temperature of 200° to 400°F. is necessary. The wood must be thoroughly dried, preferably in the bake oven. One, two or three coats of the japan are applied, generally by dipping, and baked for 10 to 60 minutes, depending upon the temperature of the oven.

Baking japans are highly specialized products and should be

purchased only after the makers have been consulted and made familiar with the exact conditions under which they are to be used and a knowledge of the results expected from them.—C. F. SCRIBNER.

Paint Circulating System

(Continued from page 10)

can be held uniform in relation to line speed by establishing exact pressure required at a given speed. The line foreman alone is to handle regulator key.

16) Eliminates the cost of supplying, maintaining, and cleaning pressure tanks and refill cans. The paint washed from this equipment and from paint hose, plus thinner lost in the operation, is saved wtih the circulating pipe line system.

Summed up, the question with which this article started is answered in the following manner: A paint-circulating system means a saving of money in production and a better finished product. It means that clean paint of uniform viscosity is circulated under regulated pressure which provides absolute control of paint consumption, reduction in paint-handling costs, utmost plant cleanliness, maximum protection against fire—all of which mean to any manufacturer, a better finish at a lower cost.

Add a beautiful surface to the well-constructed product, and immediately the salability of that product is greatly increased.

Speaking of Tough Finishes—

It seems that the foreman finisher of a furniture plant told this story to the Editor of a well-known trade magazine the other day.

He finished a sample piece of furniture with a certain Liquor-Proof Lacquer which was sent to the furniture show. After this piece was returned from the show, the finisher decided to do a little experimenting on it to see if it was really Liquor-Proof.

He tried full strength alcohol and lacquer thinners but neither would remove the lacquer. Much to his surprise he couldn't find anything to take it off... so he pushed the piece aside and did his experimenting on another.

This particular Liquor-Proof Lacquer was D-3007 made by the Ebner-Myers Varnish Co., 2245 Valley Ave., Indianapolis.—Adv.

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Telephone ..... Riley 6771

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Subscription Rates Per Year
U. S. and Possessions.....$2.00
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EDITORIAL

When, How, or If Your Finishing Doesn't Pay

Through a long process of development in several different finish-using industries there has come into commercial use a number of successful methods, equipment and materials for accomplishing desired production results. But complaints arise from time to time. A method, or piece of equipment, or some material doesn't seem to work satisfactorily—doesn't produce the expected results. Why?

It is truly said that men are only grown-up boys. Well, let's consider boys for a moment. Some boys can spin a top expertly; others don't seem to get the hang of it. Some can cut fancy figures on a pair of skates; others can't.

With men who perform manual, skilled, or semi-skilled work, you find a situation not unlike that of boys at play. Some men readily become adept at certain kinds of work, doing it easily, rapidly and skillfully. Others of apparently equal intelligence and willingness to work do not get along so well. As a result of employing the latter type of workmen, the quality of the work and the rate of production suffer. Obviously, it isn't the fault of the method, or the equipment, or the material used, although often one of these gets the blame.

The human element is a big factor in any production activity. That this is recognized and appreciated is evidenced by the fact that many manufacturers of equipment and materials send out men to demonstrate their products—to show the buyer's hired help, and perhaps the executives too, how to use it successfully and how to maintain it in proper condition for a long period of service.

Unfortunately there is a tendency on the part of some concerns to underrate the value of a good workman's experience, ability, skill and success in handling certain production equipment or materials. To class all men alike, as just so many fractions of payroll expense, and not on the basis of the human element represented, is to cheat the company that is paying for their hire. Men are not all alike. Regardless of what you pay him, one man may cost you $50.00 a day. Another may increase your net earnings $50.00 a day. There's a difference.

Cigarette-Burn-Proof Wood Finish in Demand

An urgent demand exists for a wood finish so resistant to heat that it will not be harmed by the slow burning of a cigarette resting on it or against it. A letter, typical of many we receive asking for something of this kind, is as follows:

"Our problem is this: To procure a lacquer, or if this is impracticable, a varnish, which is non-inflammable, or nearly so, that can be sprayed as a wood finish and when dry will give a relatively high gloss and not have a tendency to chip. This dried coating must not be inflammable and if possible we would like to have it prevent charring of the wood underneath when a lighted cigarette is laid upon it.

"I realize that it may be impossible to secure such a finish. Mr. Haynes (of the Haynes Laboratories) thought you might be able to put us in touch with some manufacturer or manufacturers who may have something along this line which might prove satisfactory. In such an event, it is likely a good volume of business could be secured.

"I realize a thin coating of a finish probably would not offer a very great insulating effect, but there may be some finishes on the market which have a tendency to reduce charring. Any help or suggestions you can give us will be very gratefully received."

This inquiry has been referred to two or three manufacturers who have something that is said to closely approach the requirements—how closely we are not exactly sure. It is understood that a few concerns are working on this problem. Perhaps some have solved it. We would like to hear from whoever may have or know of something in the way of an air-drying finish that fills the bill. Burn-proof and flame-resistant bake finishes for use on metal and battery cables are available, of course.

Furniture Show Attendance Indicates Improved Business

This year's 2-week winter market at the American Furniture Mart, in Chicago, broke all previous attendance records. There were 8,208 buyers representing 4,620 retail stores in 47 states, the District of Columbia, and four foreign countries. From the standpoint of business booked, the market was a marked success, most of the Furniture Mart's 600 exhibitors reporting volume up anywhere from 25% to 250%, as compared to last January's records.

Prices generally remained firm at levels slightly higher than last season, although the increases were not as substantial as had been forecast. Further upping of prices, to meet the rising costs of raw materials and the added expense saddled on manufacturers by social security legislation, is expected this spring.

Better business during 1936 is predicted by representatives of

"The business of the world is divided up between the companies which, in the long run, serve best. In other words, the company that has the best product, the best service and the best sales force, gets the most business over a period of time. Business, in a sense, is a battle of brains. The weak pass out. Only the fit, the worthwhile, the able, survive." — A. W. Roberston.

both manufacturers and retailers.

Swinging into the style angle, the story can be told almost in one word: "Modern." Although the traditional periods, notably Early American and 18th Century, were well represented as usual, a wave of contemporary styling swept the displays. Homes furnished during 1936 will tend toward Modern lines, for stores throughout the country will be featuring the new style, at least for months to come.

In percentages, Modern accounted for 41.4% of all case goods shown at the market. The extent of this lead may be appreciated when the figure is compared to the 19.2% credited to 18th Century, the second ranking style.

Fashionable Spring Colors

Brilliant tropical and outdoor themes lend freshness and vitality to the colors highlighted in the advance collection of 48 Spring woolen shades just released by the Textile Color Card Association to its members.

Among the outstanding developments in basic colors are the brilliant purplish blues of the cornflower type, as Canterbury Blue and Parma Blue. Navy, which is expected to repeat its universal popularity of last spring, finds a new expression in Battalion Blue, a swagger military tone.

Another significant color movement here and abroad is expressed in the copper or rust tone, Chaudron, its name meaning "copper kettle" in French. Besides providing an important new note for textiles, it is big color news in the accessory picture as well, especially for shoes and gloves. Safra, so called because it is of saffron cast, is the smart lighter complement of Chaudron. Capucine, a brilliant reddish rust, and its harmonizing tone Coralrust are other high spots in this range. The newest tendency in brown is a rich candy shade designated as Caramel Brown, which finds a smart accent in the "burnt" Toastbeige.

There is every indication that green will continue its present favor in new spring developments. Greyed shades like Amandine and Reseda Green represent a high fashion trend in this range, while the bluish tones, Pottery Green and Chalkgreen, are another smart reflection. Tyrol Green and Olivite are strong hues interpreting the popular yellowish note in green.

High fashion interest is evident in "off" shades with a tinge of rose. Berrywine and the lighter Rose Raspberry express this trend, while Duskrose and Cherrywood are more subdued types. Ruby Red, a jewel or American Beauty tone, and Cerise Red are rich sparkling hues. In the neutral range, grey is included in light and medium shades called Dovetone and Norfolk Gray.

Resists Refrigerants and Oils

A manufacturer of mechanical seals for rotating shafts states that DuPrene, a synthetic rubber produced by the du Pont Co., has been found to be more satisfactory as a "friction ring" material than natural rubber or any synthetic compound. The toughness of DuPrene and its resistance to the effects of heat, gasoline, oils, greases and refrigerants, which cause more or less rapid deterioration of natural rubber products, have made it especially desirable, this manufacturer finds, for

use on rotating shafts. Compositions of DuPrene have been particularly successful in resisting the newer types of refrigerants, which have been found to have an extremely deleterious effect on natural rubber.

The Story of Shellac

A small size booklet of 16 pages on the above subject has been prepared and published by William Zinsser & Co., 516 W. 59th St., New York, N. Y. It is both interesting and informative, and should be in the hands of every present and prospective user of wood finishes.

Metal Cleaning Bulletin

"Solvent Degreasing" is the title and subject matter of an attractive, illustrated bulletin wherein are explained and illustrated methods, materials and equipment used in a rapid and efficient method of cleaning metal parts and products preparatory to finishing. The bulletin contains eight pages of heavy coated paper 8½x11-in.; it should be on file for ready reference in every factory that has or is likely to have a metal cleaning operation. Write Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich.

Spray-Painting School Opens

The DeVilbiss Co., Toledo, Ohio, announces the schedule of their training school for the first half of 1936. This school is open to industrial painters, master painters, automobile refinishers, and all others interested in learning the technique of spray-painting, and the use and care of spray-painting equipment.

The training period lasts for one week. Classes will start on March 9, April 6, May 4, and June 8. Special rates in Toledo hotels and boarding houses near the plant have been secured by the company for men attending the school.

These classes have been well attended in the past because of the facilities for study, otherwise unobtainable, offered by The DeVilbiss Laboratories. It is advisable to enroll in the school as far in advance as possible, since the size of the classes must be limited, and since there will be no training periods other than those announced.

Airless Abrasive Cleaning

Comprehensive coverage of abrasive cleaning and preparation methods by description and illustration is contained in a colorful Book No. 111 on the subject of Wheelabrating—the airless abrasive cleaning and preparation method—which is avail-

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able by writing the American Foundry Equipment Co., 555 Byrkit St., Mishawaka, Ind.

The American Wheelabrator is now installed in about 150 plants. It is a mechanical device for throwing abrasive by centrifugal and tangential force onto products to be cleaned, such as castings or forgings, or for preparation of a base finish such as the satin finishing of metal stampings, and in any place where old methods of air compressed sand-blast are used. Drastic reductions in production costs are insured over that old method.

Keeler & Long Expand

Henry L. Long, president of Keeler & Long, Inc., manufacturers of paints and varnishes, in Waterbury, Conn., announces the addition of Mr. G. M. Hallett to their organization in the capacity of technical sales. Mr. Hallett brings with him the experience of 20 years in maintenance and industrial finishing fields; in laboratory, factory and sales capacities. He was formerly associated with E. I. duPont de Nemours & Co., at Chicago, and the Standard Varnish Works of Chicago and New York.

During the year 1935 Keeler & Long installed additional grinding, mixing and thinning equipment, as well as an addition to their cooking facilities, which has increased their capacity approximately 400%.

Mr. Long was previously connected with Valentine & Co., and is a brother of Dr. James Scott Long of Devoe & Raynolds Co.

Sprayed Molten Metal Coating Process

Metals Coating Co. of America, 495 N. Third St., Philadelphia, Pa., originators and developers of the sprayed molten metal coating system, announce two new information folders, about their equipment.

File Folder No. 1203, 4 pages, entitled "MetaLayeR, The Process and Equipment," describes the complete molten metal spraying system and profits to users of Hi-Cap MetaLayeR. Includes interesting half-tones of typical sprayed molten metal coatings as applied for production and maintenance work and for securing unique and attractive decorative finishes.

File Folder No. 1204, 4 pages, entitled "MetaLayeR, Complete Operating Equipment," describes in detail and illustrates Hi-Cap MetaLayeR, Hi-Cap MetaLayeR Control, complete Hi-Cap MetaLayeR blast-cleaning equipment, mass coating machines and accessories for the profitable and satisfactory operation of Hi-Cap MetaLayeR throughout its full purpose and scope.

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